MD-General Medicine

Guidelines for Competency Based PG Training Program (Revised 2022)

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NATIONAL MEDICAL COMMISSION
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GUIDELINES FOR COMPETENCY BASED POSTGRADUATE TRAINING PROGRAMME FOR M.D. IN GENERAL MEDICINE

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Preamble:

The purpose of post graduate (PG) education in General Medicine is to create specialists who would provide appropriate health care to the community and advance the cause of science through research, training and teaching the medical fraternity.

The competency-based training programme aims to produce a postgraduate doctor who after required training should be able to deal effectively with the medical needs of the community. The postgraduate specialist is also expected to know the principles of research methodology and be able to update himself with advances and practice evidence-based medicine. They should be trained to work in synchrony with faculty in super-speciality courses of Medicine and to follow a holistic approach to medical care which would lead to the development of good quality teachers. This document has been prepared by subject-content specialists of the National Medical Commission. The Expert Group of the National Medical Commission had attempted to render uniformity without compromise to the purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies.

SUBJECT SPECIFIC OBJECTIVES

Postgraduate training should enable the student to:

- Practice internal medicine with competence, with the help of scientific knowledge in an evidence based fashion.
- Conduct clinical examination and relevant investigations, diagnose medical conditions and refer early where indicated.
- Plan and deliver comprehensive treatment using the principles of rational drug therapy.
- Plan and advise measures for the prevention and rehabilitation of patients.

- Manage emergencies efficiently by providing Basic Life Support (BLS) and Advanced Life Support (ALS).
- Recognize conditions that may be outside of scope of general medicine and refer to an appropriate specialist.
- Exercise empathy and a caring attitude and maintain professional integrity, honesty and high ethical standards.
- Document case details including epidemiological data.
- Play the assigned role in the implementation of National Health Programs.
- Demonstrate competence in basic concepts of research methodology and clinical epidemiology; and preventive aspects of various disease states.
- Become a motivated 'teacher' - defined as one keen to share knowledge and skills with a colleague or a junior or any learner.
- Continue to evince keen interest in continuing education and use appropriate learning resources.
- Practice the medico-legal responsibilities.
- Undertake audit related to patient care, morbidity and mortality, use information technology tools and carry out research - both basic and clinical, with the aim of publishing the work and presenting the work at scientific forums.
- Participate in public health emergencies (arising in the community).
- Estimate the financial burden of care and practice health economics and rational approach to investigations.
- Communicate about the illness with patient's/relatives at all stages of care.

SUBJECT SPECIFIC COMPETENCIES

By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and skills (psychomotor domain) as given below:

A. Predominant in Cognitive Domain:

1. Describe clinical features of diseases of various aetiology affecting all systems in the adult and geriatric population.

2. Apply the basic sciences knowledge in understanding and managing common diseases.
3. Describe the investigations to be undertaken at various levels like OPD, Ward, ICU etc. and choose them appropriately depending on the clinical features and epidemiologic principles.
4. Describe the pharmaco-therapeutics of various diseases and complications.
5. Describe and discuss the health issues related to environmental and ecological factors.
6. Describe and discuss the methods and mechanisms of rehabilitation following diseases.
7. Describe and discuss the issues related to palliative and terminal care.
8. Incorporate the national and international guidelines related to various diseases in day to day practice and teaching.
9. Describe and discuss the social and economic aspects of illnesses, outbreaks and epidemics.
10. Analyse the observations of disease patterns in patients and community and make suggestions for improvement in management and prevention.
11. Describe and discuss the National Health Programs.
12. Analyse and critique the publications related to various aspects of illnesses and evidence based medicine.
13. Describe and discuss the various levels of prevention in communicable and non - communicable diseases.
14. Describe and discuss various legislations related to organ transplant, brain death, informed consent, human rights etc.
15. Be updated on recent advances in internal medicine.

B. Affective Domain:

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient, relatives, paramedical and medical colleagues to provide the best possible comprehensive care.

2. Always adopt ethical principles and maintain professional etiquette in dealing with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.

3. Develop communication skills to interact with patients, relatives, peers and paramedical staff, with special emphasis on breaking bad news empathetically.

4. Should demonstrate equity and equality when dealing with individuals of special groups (differently abled and LGBTQIA+).

C. Predominant in Psychomotor domain:

The post graduate student, at the end of the course should be able to perform the following skills, independently (PI) or under supervision (PS):

Clinical Assessment Skills

- Elicit a detailed clinical history (PI)
- Perform a thorough physical examination of all the systems (PI)

Procedural skills

- Pleural tap (PI)
- Lumbar puncture (PI)
- Arterial puncture for ABG (PI)
- Bone marrow aspiration and biopsy (PI)
- Abdominal paracentesis - diagnostic (PI)
- Aspiration of liver abscess (PI)

DESIRABLE

- Ultrasound abdomen at point of care (PI)
- Fine needle aspiration cytology (FNAC) from palpable lumps (PI)
- Pericardiocentesis (PS)
- Joint fluid aspiration (PI)
- Liver biopsy (PI)
- Kidney biopsy (PS)
- Cardiac-TMT (PS)
    - Holter monitoring (PS)
    - Echocardiography (point of care) (PS)
    - Doppler studies (PS)

Respiratory management

- Non-invasive and mechanical ventilation (PI)

Critically ill person

- Monitoring a sick person (PI)

- Endotracheal intubation (PI)
- Cardio-pulmonary resuscitation(PI)
- Central vein cannulation and CVP monitoring (PI)
- Using a defibrillator (PI)
- Hemodialysis (PS)
- Certification of Brain death (PI)

Interpretation Skills

Interpretation of results of the following investigations, considering clinical data (history & examination findings).

- Treadmill testing (PI)
- ABG analysis (PI)
- Ultrasonography (PI)
- CT scan chest and abdomen (PI)
- CT scan head and spine (PI)
- MRI- Brain and spine (PI)
- Barium studies- desirable (PI)
- Pulmonary function tests (PI)
- Immunological investigations (PI)
- Nerve Conduction studies /EMG (PI)
- EEG (PI)
- Evoked Potential interpretation (PI)

Communication skills (PI)

While eliciting clinical history and performing physical examination, emphasize on:

- Communicating health and disease,
- Pre-test and post-test counseling for HIV,
- Pedagogy: teaching students, other health functionaries: lectures, bedside clinics, discussions,
- Health education: prevention of common medical problems, promoting healthy life-style, immunization, periodic health screening, counseling skills in risk factors for

common malignancies, cardiovascular disease, AIDS etc.

- Dietary counseling in health and disease,
- Linking patients with community resources,
- Providing referral,
- Genetic counseling,
- Communicating bad news to the patient and relatives.

Others

- ***Demonstration of the following:*** **(PI)**
  - professionalism
  - ethical behavior (humane and professional care to patients)
- ***Utilization of information technology***
  - Medline search, Internet access, computer usage
- ***Research methodology***
  - designing a study
  - interpretation and presentation of scientific data
- ***Self-directed learning***
  - identifying key information sources
  - literature searches
  - information management
- ***Therapeutic decision-making***
  - managing multiple problems simultaneously
  - assessing risks, benefits and costs of treatment options
  - involving patients in decision-making
  - selecting specific drugs within classes
  - rational use of drugs

Syllabus

Course contents:

A: Cognitive domain:

Basic Sciences

1. Basics of human anatomy as relevant to clinical practice:

- Surface anatomy of various viscera

- Neuro-anatomy
- Important structures/organ's location in different anatomical locations in the body
- Histology of organs
- Blood supply, nerve supply to various organs

2. Applied physiology of various organ systems:
    - Basic functioning of various organ-system, control of vital functions.
    - pathophysiological alteration in diseased states.
    - interpretation of symptoms and signs in relation to pathophysiology.
    - Physiology of temperature, sleep regulation.

3. Applied biochemical basis of various diseases including fluid and electrolyte disorders:
    - Acid - base disorders, disorders of carbohydrate, fat, protein, calcium, phosphorous and iron metabolism.
    - Interpretation and clinical application of various biochemical tests.

4. Applied pathology of different diseases.
    - Common pathological changes in various organs associated with diseases and their correlation with clinical signs.
    - Understanding of various pathogenic processes and possible therapeutic interventions, and
    - Preventive measures at various levels to reverse or arrest the progression of diseases.

5. Knowledge about various microorganisms, their special characteristics important for their pathogenetic potential or of diagnostic help:
    - Important organisms associated with tropical diseases, their growth pattern/life-cycles,
    - Levels of therapeutic interventions possible in preventing and/or eradicating the organisms,
    - Antimicrobial resistance,
    - Antibiotic stewardship,
    - Hospital infection control,
    - Biomedical waste management,
    - Vaccinology.

6. Knowledge about pharmacokinetics and pharmaco-dynamics of the drugs used for the management of common problems in a normal person and in patients with diseases of kidneys/liver/systemic disorders which may need alteration in doses due to abnormal metabolism/excretion of the drugs:

    - pharmacokinetics and pharmaco-dynamics of drugs: principles and methodology
    - Rational use of available drugs.
    - Principles of drug therapy,
    - Adverse drug reactions,
    - Drug interaction,
    - Pharmacovigilance,
    - Drug abuse and addiction,
    - Drug development,
    - Pharmacoeconomics,
    - Pharmacogenomics.

7. Research methodology, study designs, clinical epidemiology and biostatistics relevant to medical sciences.

8. National Health Programmes:

    - investigation of community outbreak,
    - public health policy,
    - health promotion,
    - prevention of communicable and non-communicable diseases.
    - International health regulations,
    - Travel medicine.

9. Knowledge about various poisons with specific reference to different geographical and clinical settings - their diagnosis and management.

    - Knowledge about snake bite, other bites and stings,
    - medicolegal aspects.

Systemic Medicine

10. Preventive and environmental issues, including principles of preventive health care, immunization and occupational, environmental medicine and bioterrorism,

    - Health tourism,

- Rehabilitation,
- Drowning,
- Heat and altitude related disorders.

11. Geriatric Medicine:

- Physiology and biology of aging and various organ changes in elderly.
- Principles of geriatric medicine and uniqueness of geriatric presentation.
- Physical examination of geriatric patient.
- drug metabolism, laboratory tests in elderly.
- Management of unique problems related to elderly such as nutrition, falls, gait disorders, neuro- psychiatric problems etc.
- Mental health disorders,
- Elderly neglect and abuse,
- Social and family support and rehabilitation of elderly.
- Assessment of functional and cognitive aspects, counseling and communication with elderly.
- Appropriate medication and avoidance of poly-pharmacy.

12. Genetics:

- Overview of the paradigm of genetic contribution to health and disease
- Principles of Human Genetics
- Genetic basis of medical disorders
- Single gene and chromosomal disorders
- Genetic counseling
- Prevention of genetic disorders
- Genetic analysis
- Gene therapy

13. Immunology:

- Innate and adaptive immune systems
- Mechanisms of immune mediated cell injury
- HLA system, primary and secondary immune-deficiency,
- Allergic disorders: urticaria, angioedema, anaphylaxis and other allergic disorders.
- Transplantation immunology, immunocomplex disorders, organ specific and multisystem immune disorders, monoclonal antibodies.

14. Cardio-vascular diseases:

- Approach to the patient with possible cardio-vascular diseases
- Investigative cardiology
- Heart failure
- Arrhythmias
- Hypertension
- Coronary artery disease
- Valvular heart disease
- Infective endocarditis
- Diseases of the myocardium and pericardium
- Diseases of the aorta and peripheral vascular system
- Congenital heart diseases
- Pulmonary arterial hypertension
- Cor pulmonale

15. Respiratory system:

- Approach to the patient with respiratory diseases
- Investigative pulmonology
- Disorders of ventilation
- Asthma
- Chronic Obstructive Pulmonary Disease (COPD)
- Bronchiectasis
- Occupational lung diseases
- Interstitial lung diseases
- Hypersensitivity Pneumonitis
- Pneumonia and suppurative lung diseases
- Pulmonary embolism
- Cystic fibrosis
- Obstructive sleep apnoea syndrome and diseases of the chest wall, pleura and mediastinum
- Pulmonary manifestations of systemic diseases

16. Nephrology:

- Approach to the patient with renal diseases
- Acute kidney injury

- Chronic kidney disease
- Glomerular diseases
- Nephrotic syndrome
- Reno vascular hypertension
- Cystic Diseases of the kidney
- Tubulo-interstitial diseases
- Nephrolithiasis
- Urinary tract infection and pyelonephritis
- Diabetes and the kidney
- Obstructive uropathy and treatment of irreversible renal failure
- Dialysis
- Renal involvement in systemic diseases

17. Gastro-intestinal diseases:

- Approach to the patient with gastrointestinal diseases
- Gastrointestinal endoscopy
- Motility disorders
- Diseases of the esophagus
- Acid peptic disease
- Functional gastrointestinal disorders
- Diarrhea
- Malabsorption syndromes
- Irritable bowel syndrome
- Inflammatory bowel diseases
- Mesenteric vascular insufficiency
- Diverticular disease
- Acute intestinal obstruction
- Peritonitis
- Diseases of the rectum and anus

18. Diseases of the liver and gall bladder:

- Approach to the patient with liver disease
- Interpretation of liver function tests
- Hyperbilirubinemia
- Acute viral hepatitis
- Drug induced /toxic hepatitis

- Chronic hepatitis
- Alcoholic and non-alcoholic steatohepatitis
- Cirrhosis and its sequelae/ complications
- Portal hypertension
- Budd Chiari syndrome
- Hepatic failure and liver transplantation
- Diseases of the gall bladder and bile ducts
- Disease of pancreas including pancreatitis

19. Haematologic diseases:

- Hematopoiesis
- Anemias
- Leucopenia and leukocytosis
- Myelo-proliferative disorders
- Bone marrow failure syndromes
- Plasma cell disorders
- Disorders of hemostasis and haemopoietic stem cell transplantation
- Platelet Disorders
- Hypercoagulable conditions
- Blood components and transfusion medicine

20. Oncology:

- Epidemiology
- Biology and genetics of cancer
- Approach to patient with cancer
- Early detection or prevention of cancer
- Infection in cancer patients
- Oncological emergencies
- Paraneoplastic syndromes and endocrine manifestations of tumours
- Metastatic cancer of unknown primary site
- Hematological malignancies
- Cancers of various organ systems and cancer chemotherapy
- Rehabilitation and palliative care in cancer patients.

21. Metabolic diseases - inborn errors of metabolism and disorders of metabolism:

- Hemochromatosis

- Wilson's disease
- Porphyrias
- Other inborn errors of metabolism.

22. Nutritional diseases:

- Nutritional assessment, Anthropometry
- Enteral and parenteral nutrition
- Obesity and eating disorders.
- Malnutrition
- Vitamin and trace element deficiencies and excess.

23. Endocrine diseases:

- Approach to patients with endocrine disorders
- Disorders of Pituitary
- Disorders of thyroid gland
- Disorders of adrenal cortex
- Pheochromocytoma
- Multiple endocrine neoplasia
- Autoimmune polyendocrine syndromes
- Reproductive endocrinology including menopause and postmenopausal hormone therapy
- Diabetes mellitus
- Hypoglycemia
- Metabolic Syndrome
- Dyslipidemia
- Disorders of parathyroid gland
- Disorders of bone and mineral metabolism in health and disease
- Osteoporosis

24. Rheumatic diseases:

- Approach to the patient with rheumatic diseases
- Osteoarthritis
- Rheumatoid arthritis
- Spondyloarthropathies
- Systemic lupus erythematosus (SLE)
- Sarcoidosis

- Sjogren's syndrome
- Systemic sclerosis
- Anti-phospholipid antibody syndrome
- Bechet's disease
- Vasculitis syndromes
- Acute rheumatic fever
- Inflammatory myopathies
- Arthritis associated with systemic diseases
- Gout and crystal associated arthritis
- Relapsing polychondritis
- IgG4 related disease
- Polymyalgia rheumatica
- Fibromyalgia
- Amyloidosis

25. Infectious diseases:

- Basic consideration in Infectious Diseases
- Clinical syndromes
- Community acquired clinical syndromes
- Nosocomial infections
- Infections in immunocompromised
- Bacterial diseases - General consideration, diseases caused by gram - positive bacteria, diseases caused by gram - negative bacteria, miscellaneous bacterial infections, Atypical bacterial infections - Mycobacterial diseases, Spirochetal diseases, Rickettsial disease, Mycoplasma and Chlamydia.
- Viral diseases - DNA viruses, RNA viruses, HIV infection, Emerging viral diseases - Coronavirus, Nipha virus, H1N1 virus, Hantavirus.
- Fungal infections,
- Protozoal infections,
- Helminthic infections.

26. Neurology

- Approach to the patient with neurologic diseases,
- Diagnostic neurology,
- Localization of neurological disease/s,

- Headache,
- Seizure disorders and epilepsy,
- Coma,
- Disorders of sleep,
- Cerebrovascular diseases,
- Cranial neuropathy,
- Dementias and neurodegenerative diseases,
- Brain abscess,
- Demyelinating diseases,
- Parkinson's disease and other movement disorders,
- Motor neuron diseases,
- Ataxic and gait disorders,
- Meningitis and encephalitis,
- Prion diseases,
- Peripheral neuropathies,
- Muscle diseases,
- Diseases of spinal cord
- Diseases of neuromuscular transmission,
- Autonomic disorders and their management.

27. Psychiatric disorders

Common psychiatric disorders in adult & geriatric population:

- Mood (affective) disorders,
- Anxiety disorders,
- Schizophrenia,
- Organic mental disorders,
- Eating disorders,
- Sexual disorders,
- Personality disorder and suicide and self-harm,
- Autistic disorders,
- Functional and psychosomatic disorder,
- Somatoform disorder,
- Dissociative/ conversion disorder.
- Substance use disorders.

28. Dermatology:

- Structure and functions of skin.
- Infections of skin.
- Papulo-squamous and inflammatory skin rashes.
- Photo-dermatology.
- Erythroderma.
- Cutaneous manifestations of systematic diseases.
- Bullous diseases.
- Drug induced rashes.
- Disorders of hair and nails.
- Principles of topical therapy.

29. Critical care medicine

- Approach to patient with critical illness.
- Acute respiratory distress syndrome.
- Mechanical ventilatory support.
- Approach to patient with shock.
- Sepsis and septic shock.
- Cardiogenic shock and pulmonary edema.
- Cardiovascular collapse and cardiac arrest.
- Cardiopulmonary resuscitation.

30. Miscellaneous

- Medical illnesses in pregnancy
- Peri-operative evaluations

B: Psychomotor domain: Detailed guidelines on this section are given under Subject specific competencies.

TEACHING AND LEARNING METHODS

General principles

Acquisition of competencies being the keystone of doctoral medical education, such training should be skills oriented. Learning in the program, essentially autonomous and self-directed,

and emanating from academic and clinical work, shall also include assisted learning. The formal sessions are meant to supplement this core effort.

All students joining the postgraduate (PG) courses shall work as full-time (junior) residents during the period of training, attending not less than 80% of the training activity during the calendar year, and participating in all assignments and facets of the educational process. They shall maintain a log book for recording the training they have undergone, and details of the procedures done during laboratory and clinical postings in real time.

Teaching-Learning methods

This should include a judicious mix of demonstrations, symposia, journal clubs, clinical meetings, seminars, small group discussion, bed-side teaching, case-based learning, simulation-based teaching, self-directed learning, integrated learning, interdepartmental meetings and any other collaborative activity with the allied departments. Methods with exposure to the applied aspects of the subject relevant to basic/clinical sciences should also be used. **The suggested examples of teaching-learning methods are given below but are not limited to these. The frequency of various below mentioned teaching-learning methods can vary based on the subject's requirements, competencies, work load and overall working schedule in the concerned subject.**

Self Directed Learning (SDL) is an extension of the role of lifelong learner envisaged in the goals of the Indian Medical Graduate. All postgraduate students are expected to learn through Problem Based Learning, SDL, Project Based learning etc. Various forms of self-learning including those mediated through IT - enhanced methodologies must be adopted. Specific hours need not be ear-marked, but these should be integrated into day to day practice.

Post graduates in all specialities are expected to learn through work-based discussions and experiential learning. Beyond documentations in logbook, they should demonstrate competency related to patient care, interpretation and communication skills during the routine work in wards, OPD, ICUs, district residency postings etc. They should be involved in teaching of Undergraduate (MBBS) students also.

A. Lectures: Didactic lectures should be used sparingly. A minimum of 10 lectures per year in the concerned PG department is suggested. Topics are to be selected as per subject

requirements. All postgraduate trainees will be required to attend these lectures. Lectures can cover topics such as:

1. Subject related important topics as per specialty requirement
2. Recent advances
3. Research methodology and biostatistics
4. **Salient features of** Undergraduate/Postgraduate medical curriculum
5. Teaching and assessment methodology.

Topic numbers 3, 4, 5 can be done during research methodology/biostatistics and medical education workshops in the institute.

B. Journal club: Minimum of once in 1-2 weeks is suggested.

Topics will include presentation and critical appraisal of original research papers published in peer reviewed indexed journals. The presenter(s) shall be assessed by faculty and grades recorded in the logbook.

C. Student Seminar: Minimum of once every 1-2 weeks is suggested.

Important topics should be selected as per subject requirements and allotted for in-depth study by a postgraduate student. A teacher should be allocated for each seminar as faculty moderator to help the student prepare the topic well. It should aim at comprehensive evidence-based review of the topic. The student should be graded by the faculty and peers.

D. Student Symposium: Minimum of once every 3 months.

A broad topic of significance should be selected, and each part shall be dealt by one postgraduate student. A teacher moderator should be allocated for each symposium and moderator should track the growth of students. The symposium should aim at an evidence-based exhaustive review of the topic. All participating postgraduates should be graded by the faculty and peers.

E. Laboratory work / Bedside clinics: Minimum - once every 1-2 weeks.

Laboratory work/Clinics/bedside teaching should be coordinated and guided by faculty from the department. Various methods like DOAP (Demonstrate, Observe, Assist, Perform), simulations in skills lab, and case-based discussions etc. are to be used. Faculty from the department should participate in moderating the teaching-learning sessions during clinical rounds.

F. Interdepartmental colloquium

Faculty and students must attend monthly meetings between the main Department and other department/s on topics of current/common interest or clinical cases.

G. (a). Rotational clinical / community / institutional postings

Depending on local institutional policy and the subject specialty needs, postgraduate trainees may be posted in relevant departments/ units/ institutions. The aim would be to acquire more in-depth knowledge as applicable to the concerned specialty. Postings would be rotated between various units/departments and details to be included in the specialty-based Guidelines. Few examples are listed below:

- Broad specialty departments
- Emergency/Casualty department
- Super specialty departments e.g. Cardiology / Endocrinology / Nephrology / Medical Oncology etc.
- Laboratory-based specialty units/departments e.g. Biochemistry/Microbiology/ Infection control unit/Laboratory Medicine etc.

G. (b). Posting under "District Residency Programme" (DRP):

All postgraduate students pursuing MS/MS in broad specialties in all Medical Colleges/Institutions shall undergo a compulsory rotation of three months in District Hospitals/District Health System as a part of the course curriculum, as per the Postgraduate Medical Education (Amendment) Regulations (2020). Such rotation shall take place in the 3rd or 4th or 5th semester of the Postgraduate programme and the rotation shall be termed as "District Residency Programme" and the PG medical student undergoing training shall be termed as "District Resident".

Every posting should have its defined learning objectives. It is recommended that the departments draw up objectives and guidelines for every posting offered in conjunction with the collaborating department/s or unit/s. This will ensure that students acquire expected competencies and are not considered as an additional helping hand for the department / unit in which they are posted. The PG student must be tagged along with those of other relevant departments for bedside case discussion/basic science exercises as needed, under the guidance of an assigned faculty.

Opportunities to present and discuss infectious disease cases through bedside discussion and ward/grand rounds with specialists / clinicians in different hospital settings must be scheduled to address antimicrobial resistance issues and strategies to deal with it.

H. Teaching research skills

Writing a thesis should be used for inculcating research knowledge and skills. All postgraduate students shall conduct a research project of sufficient depth to be presented to the University as a postgraduate thesis under the supervision of an eligible faculty member of the department as guide and one or more co-guides who may be from the same or other departments.

In addition to the thesis project, every postgraduate trainee shall participate in at least one additional research project that may be started or already ongoing in the department. It is preferable that this project will be in an area different from the thesis work. For instance, if a clinical research project is taken up as thesis work, the additional project may deal with community/field/laboratory work. Diversity of knowledge and skills can thereby be reinforced.

I. Training in teaching skills

MEU/DOME should train PG students in education methodologies and assessment techniques. The PG students shall conduct UG classes in various courses and a faculty shall observe and provide feedback on the teaching skills of the student.

J. Log book

During the training period, the postgraduate student should maintain a Log Book indicating the duration of the postings/work done in Wards, OPDs, Casualty and other areas of posting. This should indicate the procedures assisted and performed and the teaching sessions attended. The log book entries must be done in real time. The log book is thus a record of various activities by the student like: (1) Participation & performance, (2) attendance, (3) participation in sessions, (4) completion of pre-determined activities, and (5) acquisition of selected competencies.

The purpose of the Log Book is to:

a) help maintain a record of the work done during training,
b) enable Faculty/Consultants to have direct information about the work done and intervene, if necessary,
c) provide feedback and assess the progress of learning with experience gained periodically.
d) Documentation of acquisition required competencies

The Log Book should be used in the internal assessment of the student; should be checked and assessed periodically by the faculty members imparting the training. The PG students will be required to produce completed log book in original at the time of final practical examination. It should be signed by the Head of the Department. A proficiency certificate from the Head of Department regarding the clinical competence and skillful performance of procedures by the student will be submitted by the PG student at the time of the examination.

The PG students shall be trained to reflect and record their reflections in log book particularly of the critical incidents. Components of good teaching practices must be assessed in all academic activity conducted by the PG student and at least two sessions dedicated for assessment of teaching skills must be conducted every year of the PG program. The teaching faculty are referred to the MCI Logbook Guidelines uploaded on the Website.

K. **Course in Research Methodology**: All postgraduate students shall complete an online course in Research Methodology within six months of the commencement of the batch and generate the online certificate on successful completion of the course.

Other aspects

- The Postgraduate trainees must participate in the teaching and training program of undergraduate students and interns attending the department.
- Trainees shall attend accredited scientific meetings (CME, symposia, and conferences) at least once a year.
- Department shall encourage e-learning activities.
- The Postgraduate trainees should undergo training in Basic Cardiac Life Support (BCLS) and Advanced Cardiac Life Support (ACLS).
- The Postgraduate trainees must undergo training in information technology and use of computers.

During the training program, patient safety is of paramount importance; therefore, relevant clinical skills are to be learnt initially on the models, later to be performed under supervision followed by independent performance. For this purpose, provision of skills laboratories in medical colleges is mandatory.

ASSESSMENT

FORMATIVE ASSESSMENT, ie., assessment to improve learning

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.

General Principles

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills.

The Internal Assessment should be conducted in theory and practical/clinical examination, should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills.

Quarterly assessment during the MD training should be based on:

- Case presentation, case work up, case handling/management : once a week
- Laboratory performance : twice a week
- Journal club : once a week
- Seminar : once a fortnight
- Case discussions : once a fortnight/month
- Interdepartmental case or seminar : once a month

Note: These sessions may be organized and recorded as an institutional activity for all postgraduates.

- Attendance at Scientific meetings, CME programmes (at least 02 each)

The student to be assessed periodically as per categories listed in appropriate (non-clinical/clinical) postgraduate student appraisal form (Annexure I).

SUMMATIVE ASSESSMENT, ie., assessment at the end of training

Essential pre-requisites for appearing for examination include:

1. **Log book** of work done during the training period including rotation postings, departmental presentations, and internal assessment reports should be submitted.

2. At least **two presentations** at national level conference. One research paper should be published / accepted in an indexed journal**. (It is suggested that the local or University Review committee assess the work sent for publication).**

The summative examination would be carried out as per the Rules given in the latest POSTGRADUATE MEDICAL EDUCATION REGULATIONS. The theory examination shall be held in advance before the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the commencement of the clinical/Practical and Oral examination**.**

The postgraduate examination shall be in three parts**:**

1. **Thesis**

   Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A post graduate student in broad specialty shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners**.**

2. **Theory examination**

   The examinations shall be organized on the basis of 'Grading' or 'Marking system' to evaluate and to certify post graduate student's level of knowledge, skill and competence at the end of the training, as given in the latest POSTGRADUATE MEDICAL EDUCATION REGULATIONS. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole. The examination for M.D./ M.S shall be held at the end of 3rd academic year.

   There shall be four theory papers (as per PG Regulations).

   Paper I: Basic sciences as applied to the subject

   Paper II: Therapeutics & Tropical Medicine

   Paper III: Sytstemic Medicine of all organ systems

   Paper IV: Recent advances in the subject.

3. **Practical/clinical and Oral/viva voce examination**

Practical examination

Practical examination should be spread over **two** days and include various major components of the syllabus focusing mainly on the psychomotor domain.

Oral/Viva voce examination on defined areas should be conducted by each examiner separately. Oral examination shall be comprehensive enough to test the post graduate student's overall knowledge of the subject focusing on psychomotor and affective domain.

The final clinical examination in broad specialty clinical subjects should include:

- Cases pertaining to major systems (eg. one long case and three short cases)
- Stations for clinical, procedural and communication skills
- Log Book Records and reports of day-to-day observation during the training
- It is emphasized that Oral/viva voce examination shall be comprehensive enough to test the post graduate student's overall knowledge of the subject.

Recommended Reading:

Text Books (latest edition)

1. API Text book of Medicine
2. Davidson's Principles and Practice of M
3. Harrison's Principles & Practice of Medicine
4. Oxford Text book of Medicine
5. Kumar & Clark: Book of Clinical Medicine
6. Cecil: Text Book of Medicine
7. Current medical diagnosis and treatment
8. Washington manual of medical therapeutics
9. Krishnadas. K.V: Text Book of Medicine

Journals

03-05 international Journals and 02 national (all indexed) journals.

Annexure 1

Student appraisal form for MD in General Medicine											
	Element	**Less than Satisfactory**			**Satisfactory**			**More than satisfactory**			**Comments**
		1	2	3	4	5	6	7	8	9	
1	**Scholastic Aptitude and Learning**										
1.1	Has Knowledge appropriate for level of training										
1.2	Participation and contribution to learning activity (e.g., Journal Club, Seminars, CME etc)										
1.3	Conduct of research and other scholarly activity assigned (e.g Posters, publications etc)										
1.4	Documentation of acquisition of competence										
	(eg Log book)										
1.5	Performance in work based assessments										
1.6	Self- directed Learning										
2	**Care of the patient**										
2.1	Ability to provide patient care appropriate to level of training										
2.2	Ability to work with other members of the health care team										
2.3	Ability to communicate appropriately and empathetically with patients families and care givers										
2.4	Ability to do procedures appropriate for the level of training and assigned role										
2.5	Ability to record and document work accurately and appropriate for level of training										

2.6	Participation and contribution to health care quality improvement										
3	**Professional attributes**										
3.1	Responsibility and accountability										
3.2	Contribution to growth of learning of the team										
3.3	Conduct that is ethical appropriate and respectful at all times										
4	**Space for additional comments**										
5	**Disposition**										
	Has this assessment been discussed with the trainee?	Yes	No								
	If not explain										
	Name and Signature of the assesse										
	Name and Signature of the assessor										
	Date										

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