

**NATIONAL MEDICAL COMMISSION  
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**GUIDELINES FOR COMPETENCY BASED  
POSTGRADUATE TRAINING  
PROGRAMME  
FOR  
M.D. IN GERIATRICS**

# **GUIDELINES FOR COMPETENCY BASED POSTGRADUATE TRAINING PROGRAMME FOR MD IN GERIATRICS**

## **Preamble:**

Older people carry a large burden of disease and disability and pose a tremendous challenge for the health sector as well as also social and economic infrastructure. Several initiatives of Government of India namely: National Policy on Older Persons (1999), National Health Policy (2015), National Population Policy (2015), Maintenance and Welfare of Parents and Senior Citizens Act, (2007) and the National Program for Health Care of the Elderly (2011, 2014), have emphasized the need for provision of quality and specialized health care of the older population. Specialized training in the field of Geriatrics/ Geriatric Medicine has become the need of the hour to realize the state initiatives in old age care. Since 1996, the discipline has evolved in tune with the societal needs. There are two terms for the discipline; Geriatrics and Geriatric Medicine; a matter of semantics rather than any substantial difference. The National Medical Commission has accepted the term Geriatrics, but will accept Geriatric Medicine as the same discipline for all purposes including recognition.

The purpose of post graduate (PG) education in Geriatrics/ Geriatric Medicine is to create specialists who would provide appropriate health care to older patients in the society 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 sub-specialty 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. The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. 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”. Most of the learning is on-the-go interspersed with lectures/demonstrations/seminars/journal clubs and other teaching/learning methods

## **Goals**

The goals of these Guidelines are to create a cadre of health professionals who would:

1. provide comprehensive health care and rehabilitation of the older person
2. provide holistic undergraduate and postgraduate training
3. carry out ethical research in geriatrics and gerontology

## ***SUBJECT SPECIFIC LEARNING OBJECTIVES***

After completion of post graduation in Geriatrics, the student should be able to fulfill the following objectives:

1. To perform a comprehensive assessment of an older person, including mood and cognition, gait, nutrition and fitness for surgery in out-patient, in-patient; and home or community setting.
2. To diagnose and manage acute illness in old age in out-patient, in-patient; and home or community setting.
3. To diagnose and manage chronic disease and disability in out-patient, in-patient; and home or community setting
4. To provide comprehensive treatment of acute and chronic disease using the principles of rational drug therapy.
5. To provide rehabilitation with the multidisciplinary team to an older patient in an out-patient, in-patient; and home or community setting.
6. To plan the transfer of care of frail older patients from hospital to home settings.
7. To apply the knowledge and skills of a competent geriatrician in an intermediate care, home and/or community setting.
8. To assess and manage older patients presenting with the common geriatric problems: (a) falls with or without fracture, (b) delirium, (c) incontinence, (d) poor mobility
9. To demonstrate competence in palliative care, ortho-geriatric care, old age psychiatry and stroke care.
10. To manage health emergencies efficiently by providing Basic Life Support (BLS)

and Advanced Life Support (ALS).

11. To recognize conditions that may be outside of scope of medical management and to refer to an appropriate specialist.
12. To exercise empathy and maintain professional integrity, honesty and high ethical standards with caring attitude.
13. To describe and discuss various national health programs for older people and organize their implementation.
14. To participate in public health emergencies (arising in the community).
15. To estimate the financial burden of care and practice health economics and rational approach to investigations.
16. To demonstrate competence in basic research methodology, ethical principles of research, comprehensive scrutiny of medical literature and interest in basic or clinical research with the aim of publishing the work and presenting the work at scientific forums.
17. To undertake audit related to patient care, morbidity and mortality, use information technology tools and carry out clinical research.
18. To develop skills of teaching to become a motivated 'teacher' keen to share knowledge and skills with a colleague or a junior or any learner.
19. To develop skills of empathetic communication with patients and their care givers about the illness all stages of care.

Expertise in some areas will develop throughout training, while others may require specific full time or periodic attachments to achieve the appropriate level of knowledge and skills.

## ***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**

At the end of the course, the student should have acquired knowledge in the following theoretical competencies and should be able:

1. To obtain a relevant focused history
2. To evaluate, diagnose, and plan therapeutic and preventive strategies for older

adults.

3. To prescribe, review and monitor appropriate medication
4. To formulate a diagnostic and therapeutic plan for the older patients according to the clinical information available and communicate the same
5. To perform a comprehensive geriatric assessment
6. To diagnose and manage acute illness in older patients in a variety of settings
7. To diagnose and manage chronic disease and disability in older patients in both hospital and home settings
8. To recognize, diagnose and manage a state of delirium presenting both acutely or sub- acutely in older patients
9. To assess and manage patients who present with dementia alone or with other illnesses
10. To acquire knowledge and skills required to assess and manage urinary and fecal incontinence
11. To assess and manage older patients presenting with falls (with or without fracture)
12. To assess the nutritional status of older people and devise an appropriate nutritional support strategy
13. To assess the cause of immobility and declining mobility in older patients and its management
14. To assess, diagnose and monitor common types of leg and pressure ulceration, surgical and other wounds in older patients
15. To manage older patients with movement disorders
16. To provide care for patients with acute stroke and chronic stroke-related disability
17. To assess acutely ill orthopedic patients and their rehabilitation
18. To assess and manage older patients with psychiatric conditions
19. To provide the post graduate student with advanced knowledge and skills to assess and manage older patients presenting with falls (with or without injury) or syncope
20. To develop knowledge and skills to assess and manage older patients with fracture, particularly hip fracture and manage fracture risk
21. To develop knowledge and skills to assess and manage older patients with gynecological problems
22. To identify the important concepts of patho-physiology of common diseases of older people.
23. To assess and advise appropriate palliative care to older patients with malignant and non-malignant life-limiting diseases

24. To discuss the risks of treatments with patients and their relatives so that they are aware of risks and are able to make clinical decisions
25. To manage/control infection in patients including risk of cross- infection
26. To communicate effectively and sensitively with patients, relatives and care-givers
27. To deliver bad news according to the needs of individual patients, relatives and care-givers
28. To apply the principles and laws regarding medical ethics and confidentiality
29. To obtain valid consent from the patient
30. To perform audit of clinical practice
31. To work effectively with many teams and put the quality and safety of patient care as a prime objective
32. To describe / define
  - anatomical and histological changes associated with ageing
  - pathology associated with normal ageing and age associated disease processes
  - biochemical, molecular, cellular, genetic theories of ageing
  - physiology of ageing
  - effect of ageing upon pharmaco-dynamics and pharmacokinetics

## **B. Affective Domain**

At the end of the course, the student should have acquired knowledge in the following theoretical competencies and should be able:

1. To function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. To adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. To develop communication skills to word reports and professional opinionas well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

## **C. Predominant in Psychomotor domain**

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

1. History taking in the elderly (PI)
2. Physical Examination of the old patient (PI)

### 3. **Investigations in the elderly**

1. Policy and interpretation (PI)
2. Radiological, Hematological and Biochemical investigations (PI)
3. ECG (PI)
4. Urinalysis (PI)
5. Radioisotope tests/ Bone Scan
6. Imaging – Ultrasound, CT Scan, MRI
7. How much to investigate (PI)
8. Concept of normal range (PI)
9. Nutritional Assessment (PI)
10. Investigation of heart diseases in old age (PS)
  - o Cardiac Arrhythmias
  - o Coronary Artery Disease
  - o Acute Myocardial Infarction
  - o Hypertension and Hypertensive Heart Disease
  - o Postural Hypotension
  - o Congestive Heart Failure
  - o Aortic aneurysm
  - o Bacterial endocarditis
  - o Peripheral vascular disease
  - o Deep Venous Thrombosis
11. Investigations of the Gastro-intestinal tract (PS)
  - o Disorders of the mouth/loss of teeth
  - o GERD / Hiatus Hernia/ Acid Peptic Disease
  - o Disease of the pancreas
  - o Diseases of the small intestine
  - o Diseases of the large intestine
  - o Fecal incontinence/ Constipation - prevention and management
  - o GI malignancy
  - o Disease of the liver and biliary System
12. Investigations of the genitor-urinary tract
  - o Urinary Tract Infection - diagnosis and management (PI)
  - o Benign hypertrophy and cancer of the prostate - diagnosis and management (PS)
  - o Urinary incontinence/ Urinary retention- evaluation and management (PI)

13. Management of Psychiatric Illness
  - o Diagnosis and management of - depression, cognitive impairment/ dementia, anxiety state
  - o Diagnosis and management of acute confused state/delirium (PI)
14. Investigations and management of endocrine disorders
  - o Diabetes (PI)
  - o Thyroid diseases (PI)
15. Investigation and management of neurological disorders
  - o Stroke (PI)
  - o Parkinson disease (PI)
16. Investigation and management of ;
  - o Osteoarthritis (PI)
  - o Osteoporosis (PI)
17. Investigation and management of:
  - o COPD/bronchial asthma/ cor-pulmonale/ acute and chronic respiratory failure (PI)
  - o Tuberculosis (PI)
  - o Pulmonary thrombo-embolism (PI)
  - o Pneumonia - cause, diagnosis and treatment (PI)
  - o Lung cancer (PS)
18. Malignancy in old age: (PS)
  - o Investigation and Management (PS)
  - o Early detection and Counseling (PI)
19. Surgery in the Elderly: (PS)
  - o Pre-operative Assessment
  - o Priorities for surgery
  - o Surgical Emergencies
  - o Fractures
  - o Pathological fractures
  - o Benign lesions
  - o Gangrene - Amputation
  - o Elective Surgery
  - o Post-operative problems and Management
  - o Anesthesia in old age

## Syllabus

The broad outline of the course contents is given below:

- A) Basic Sciences: Biology of human ageing, Epidemiology of human ageing, Immunology of human ageing, Effect of ageing on different organs, death.
- B) Clinical Geriatrics: General Medicine, Geriatric Medicine, Cardiology, Pulmonary Medicine, Gastroenterology, Endocrinology, Nephrology, Neurology, Rheumatology, Hematology and Oncology.
- C) Applied Geriatrics in allied specialities: Orthopedics, Urology, Gynecology, Ophthalmology, ENT, Dentistry, Psychiatry, Pre - and post - anesthetic evaluation and management.
- D) Preventive geriatrics: Rehabilitation, end of life care, legal, ethical and economic aspects

The details of the course contents are outlined herewith:

**Basic Sciences :**

- 1. Anatomy
- 2. Physiology
- 3. Biochemistry
- 4. Pharmacology
- 5. Microbiology
- 6. Pathology

**General Medicine and Psycho-Geriatrics**

**Introduction to Clinical Medicine:**

- 1. Headache
- 2. Chest pain
- 3. Abdominal pain
- 4. Fever
- 5. Lassitude and Asthenia
- 6. Cough
- 7. Nausea and Vomiting
- 8. Syncope

**Immunological Factors in Disease:**

- 1. Components of immune system
- 2. Mechanism of the immune response
- 3. Immune deficiency and lympho-proliferative disorders
- 4. Types of immune reaction and their relation to disease
- 5. Suppression of immune reactions and its effects

6. Immunosenescence
7. Inflammaging

### **Infection and Diseases:**

1. Nature of microorganisms
2. Epidemiology and spread of infections
3. Immunity and Immunosenescence
4. Diagnosis and management of infections
5. Short duration fever
6. Pyrexia of unknown origin

### **Chemotherapy of Infections:**

1. Antibiotics
2. Antibiotic stewardship
3. Anti-virals
4. Anti-fungals

### **Disturbances in Electrolyte and Water Metabolism:**

1. Hypernatremia and hyponatremia
2. Hyperkalemia and hypokalemia
3. Calcium-phosphate and magnesium metabolism
4. Disturbances in H<sup>+</sup> ion concentration
5. Fluid balance

### **Diseases of the Cardiovascular System:**

1. Cardiac Arrhythmias
2. Cardiac failure
3. Valvular Heart Disease
4. Ischemic Heart Disease
5. Pericardial diseases
6. Cardiomyopathies, Myocarditis
7. Atherosclerosis, hypertension
8. Hypertensive heart disease
9. Diseases of the aorta
10. Peripheral Vascular Disease

### **Diseases of the Respiratory System:**

1. Disease of the Upper and Lower Respiratory Tract
2. Bronchial Asthma, chronic Obstructive Pulmonary Disorder (COPD), Cor pulmonale

3. Acute and Chronic Respiratory Failure
4. Interstitial lung diseases
5. Neoplasms of lung – diagnosis and principles of management
6. Diseases of Pleura, Mediastinum and Diaphragm
7. Sleep disorders

**Diseases of the Gastrointestinal System:**

1. Diseases of the esophagus, Gastro-esophageal Reflux Disorder (GERD)
2. Peptic Ulcer, gastritis and other diseases of the stomach
3. Inflammatory diseases of small and large intestine
4. Diverticulosis
5. Malignancy of stomach, small intestine, colon and rectum
6. Malabsorption syndrome
7. Diseases of the peritoneum
8. Irritable bowel disease
9. Faecal incontinence

**Diseases of the Liver and Biliary Tract:**

1. Diagnostic procedures in liver disorders
2. Derangement of hepatic/biliary metabolism
3. Acute Hepatitis
4. Chronic hepatitis
5. Cirrhosis of liver
6. Liver Abscess
7. Tumors of liver – diagnosis and principles of management
8. Infiltrative and Metabolic diseases of liver
9. Disorders of Gall Bladder and Bile Duct
10. Ascites

**Diseases of the Pancreas:**

1. Diagnosis of pancreatic diseases
2. Acute and chronic pancreatitis
3. Tumors of pancreas

**Diseases of the Kidney and Urinary System:**

1. Acute Renal Failure
2. Chronic Kidney Disease
3. Glomerulonephritis
4. Nephrotic syndrome

5. Vascular diseases of the kidney
6. Infections of the urinary tract
7. Obstructive Uropathy
8. Urinary Incontinence
9. Nephrolithiasis
10. Renal Cell Carcinoma

**Diseases of the Endocrine System:**

1. Hyperthyroidism and hypothyroidism
2. Hyperparathyroidism and hypoparathyroidism
3. Diabetes Mellitus
4. Hypo-thalamus and pituitary gland
5. Diseases of the Anterior Pituitary
6. Disorders of the neuro-hypophysis
7. Hyperinsulinism /Glucagon and its effects
8. Diseases of the Adrenal Cortex and Medulla
9. Diseases of the testes and ovaries

**Diseases of Blood and Blood Forming Organs:**

1. Blood formation and destruction
2. Blood groups and transfusion
3. Anemia
4. Leukemia
5. Bone Marrow Failure
6. Myeloproliferative disorders
7. Disorders of platelets
8. Hemorrhagic disorders
9. Abnormal hemoglobins
10. Lymphomas
11. Diseases of Spleen and Reticulo-endothelial system
12. Plasma cell dyscrasias

**Diseases of Connective Tissue, Joints and Bones:**

1. Rheumatoid Arthritis, including Late Onset Rheumatoid Arthritis (LORA)
2. Ankylosing spondylitis
3. Systemic Lupus Erythematosus
4. Vasculitis
5. Scleroderma

6. Polymyalgia Rheumatica
7. Gout/ Pseudogout
8. Osteoarthritis
9. Diseases of bone - Metabolic and Endocrine
10. Tumors of Bone

**Diseases of the Nervous System:**

1. Diagnostic methods in Neurology
2. Coma, Altered sensorium
3. Headache
4. Epilepsy
5. Diseases of Cranial Nerves
6. Cerebro-vascular Diseases
7. Diseases of the Spinal Cord
8. Diseases of the Peripheral Nervous System
9. Pyogenic infections of the CNS
10. Viral Infections
11. Multiple Sclerosis and other demyelinating diseases
12. Metabolic and Nutritional diseases of brain
13. Neurodegenerative diseases including Dementia
14. Movement disorders including Parkinson disease
15. Dizziness and vertigo

**Diseases of the Skin:**

1. Skin lesions commonly seen in the geriatric population
2. Generalized pruritus
3. Pressure ulcers
4. Pigmentation of the skin
5. Disorders of melanin metabolism
6. Photosensitivity
7. Hirsutism and alopecia
8. Cutaneous manifestations of internal malignancy
9. Psoriasis
10. Scabies
11. Infections of the skin

**Psycho-Geriatrics:**

1. Epidemiology of Mental Disorders in the older person

2. Definition and classification of Psychiatric Disorders
3. Delirium /Acute confusional state
4. Dementia
5. Depression in old age
6. Bipolar disorder
7. Functional psychiatric disorders in old age
8. Personality and behavioral disorders
9. Psychogeriatric service - Principles of treatment
10. Management of psychiatric illness
11. Alcoholism and the older patient
12. Care-giver issues

### **Geriatrics**

#### **General:**

1. Demography, world trends
2. Trends in India and developing countries
3. The Aged and Society – past, present and future
4. The evolution of Geriatrics

#### **Gerontology:**

1. Ageing changes
2. Theories of ageing
3. Metabolic and structural aspects of ageing
4. Biochemical changes in the normal ageing Brain
5. Ageing in tissues and cells
6. Atherosclerosis and ageing
7. Homeostenosis

#### **Geriatrics :**

1. How are older patients different?
2. History taking in the older person
3. Physical Examination of the older person
4. Comprehensive Geriatric Assessment (CGA)
5. Geriatric Giants: immobility, instability (falls), incontinence, impaired intellect/memory, frailty, sarcopenia, anorexia of ageing, cognitive impairment, polypharmacy

#### **Investigations in the older person:**

1. Concept of normal range

2. How much to investigate?
3. Interpretation of the results

**Immunology:**

1. Genetic aspects of Immunity and Immunological Diseases
2. Mutation
3. Alternative theories of Ageing
4. Cancer
5. Immunological Surveillance

**Nutrition:**

1. Recommended daily allowances of nutrients
2. Prevention of nutritional deficiency
3. Nutritional Assessment
4. Nutritional deficiencies in old age
5. Osteomalacia and Vitamin D deficiency
6. Vitamin B12 deficiency
7. Micronutrients

**Cardiovascular System:**

1. Changes in Physiology and Pathology of cardiovascular system in old age
2. Investigation of Heart Diseases
3. Cardiac Arrhythmias
4. Coronary Artery Disease and Acute Myocardial Infarction
5. Hypertension and Hypertensive Heart Disease
6. Congestive Cardiac Failure
7. Postural Hypotension
8. Valvular Heart Disease
9. Aortic aneurysm
10. Bacterial Endocarditis
11. Peripheral Vascular Disease
12. Deep Venous Thrombosis and Pulmonary Embolism

**Endocrine and Metabolic Disorders:**

1. Changes with ageing
2. Diabetes Mellitus
3. Diseases of the Pituitary, Parathyroid and Thyroid
4. Obesity
5. Sexual dysfunction

6. Disorders of Sodium, Potassium, Calcium, Magnesium and Zinc
7. Disturbances in Fluid Metabolism

### **Central Nervous system:**

1. The Ageing Brain
2. Vascular lesions of the Central Nervous System
  - Neurodegenerative disorders including Dementia
  - Movement disorders including Parkinson disease
  - Head Trauma
  - Infections of the Nervous System
  - Epilepsy
  - Peripheral Neuropathy
  - Disorders of Spinal cord and Nerve Roots
  - Neoplasia

### **Genitourinary System:**

1. Structural changes with ageing
2. Acute and Chronic Renal Failure
3. Infections of the Genito-urinary tract
4. Diseases of the bladder and prostate
5. Urinary Incontinence
6. Ageing changes in the Genital Tract
7. Post-menopausal bleeding
8. Gynecological disorders in the older person

### **Disorders of the Special Senses:**

1. Disorders of the Eye
2. Hearing Disturbances
3. Disturbance of Taste and Smell
4. Dental Problems

### **Infections in the older persons:**

1. Host Defenses - natural barriers
2. White Cell response, immune mechanism
3. Fever- short duration and pyrexia of unknown origin
4. Urinary Infection - diagnosis and treatment
5. Pneumonia - cause, diagnosis and treatment
6. Skin infections
7. Septicemia

8. Bacterial Endocarditis
9. Antibiotics and antibiotic stewardship

**Gastro-intestinal system:**

1. Changes with age
2. Investigations of the gastro-intestinal tract
3. Disorders of the mouth
4. GERD / Hiatus Hernia
5. Acid Peptic Disease
6. Disease of the Pancreas
7. Diseases of the small Intestine
8. Diseases of the large Intestine
9. Fecal Incontinence
10. GI Malignancy
11. Disease of the liver and Biliary System
12. Constipation – Prevention and Management

**Respiratory System:**

1. Changes with age
2. Infections of the Respiratory System
3. Bronchial Asthma, Chronic Obstructive Airway Disease, Cor Pulmonale
4. Bronchogenic carcinoma
5. Respiratory Abnormalities in Extra-pulmonary conditions
6. Respiratory Failure

**Musculoskeletal System:**

1. The ageing joints
2. Degenerative joint disease
3. Gout/ pseudo-gout
4. Rheumatoid Arthritis
5. Infective Arthritis
6. Myositis/ Myopathy
7. Polymyalgia Rheumatica
8. Vasculitis including Temporal Arteritis
9. Fibromyalgia
10. Osteoporosis
11. Osteomalacia

**Hematopoietic System:**

1. Changes with ageing
2. Anemia
3. Leukemias and Lymphomas
4. Para-proteinaemia
5. Myelodysplastic syndromes
6. Platelet disorders
7. Disorders of Hemostasis

**Dermatology:**

1. Ageing skin
2. Senile purpura
3. Bed sores
4. Pruritus
5. Cancers/benign lesions
6. Pemphigus/ pemphigoid
7. Leg ulcers

**Malignancy in old age:**

1. Epidemiology
2. Presentation
3. Early detection and counseling
4. Investigation and principles of management

**Pharmacological Aspects of Ageing:**

1. Pharmacokinetics
2. Pharmacodynamics
3. Drug selection and dosage
4. Drug interactions
5. Adverse Drug Reactions
6. Drug Compliance
7. Antibiotic stewardship

**Surgery in the Older patient:**

1. Pre-operative Assessment
2. Anesthesia in old age
3. Surgical Emergencies
4. Elective Surgery
5. Fractures and soft tissue injuries
6. Amputation

## 7. Post-operative problems and Management

### **Special Problems:**

1. Pressure sore
2. Care of the chronically ill
3. Care of patients with terminal illness
4. Religion and Illness
5. Falls

### **Critical/Emergency care**

1. Oxygen supplementation
2. NIV/Ventilator setting adjustment
3. Fluid balance
4. Electrolyte balance
5. Poisoning
6. Hyperpyrexia / Heat Stroke

### **Social and Preventive Geriatrics including Rehabilitation, and Advances in**

#### **Geriatrics, Social Geriatrics:**

1. Types of Family - Family structure. – Intergenerational interaction
2. Social changes due to urbanization and industrialization,
3. Isolation, loneliness and dependency - Dependency ratio - Generational equality
4. Role of Government and NGOs in upliftment of socio-economic status of older people.
5. National policies on ageing
6. Geriatric Service for the Elderly in Western Countries and in India -
7. Day Hospital, Day Care Centre, Long Stay Care Institution, Home for the Aged, functions of the Day Hospital - Western model
8. Psycho-geriatric services - structure and facility - Domiciliary assessment and community care
9. Terminal Care Services - social and spiritual problems in Terminally ill
10. Ethical Issues in Geriatric Medicine - Informed Consent
11. Euthanasia - Acts of omission and commission
12. Elder abuse
13. Setting up of a robust promotive/preventive/ rehabilitative program for the older person in the community

#### **Preventive Geriatrics:**

1. Preventing Diseases and promoting health in old age - Types of preventive activities - Risk factor management in the older person- screening

2. Health belief model - General Health practices in elderly
3. Exercise in the elderly - Physical and Mental domain - Benefits of Exercise
4. Development of Anticipatory Care and its Rationale - methods of Anticipatory Care
5. Health promotion and Health Education in the Elderly
6. Anti-Ageing interventions

**Rehabilitation:**

1. The concepts and goals of Rehabilitation
2. Principles of Rehabilitation - Assessment, goals, priorities and monitoring of progress
3. Rehabilitation in old age - Special features in relating to ageing, multimorbidity, expectation of the patient and carers, intercurrent acute illnesses, social and financial support
4. Clinical evaluation of rehabilitation - impairment, disability and handicap (ICF structure)
5. Multidisciplinary team - Team leadership, therapist, physiotherapy, occupational therapy, speech and swallow therapist, social worker, physician and nursing personnel.
6. Self-care evaluation and management of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) - Self Care Assessment Tools
7. Aids and appliances
8. Role of the different members of the multidisciplinary team in the process of rehabilitation
9. Contractures and other deleterious effects of immobility
10. Pressure Ulcer - factors, prevention and management
11. Rehabilitation of chronic illnesses in the older person- stroke, CCF, COPD, Arthritis etc.
12. Rehabilitation of specific diseases - Parkinsonism, Paraplegia, Fracture neck of femur, acute and chronic arthritis, lower limb amputation, low back pain
13. Gait assessment and prevention of Falls
14. Organization and effectiveness of rehabilitation services - Community Services
15. Geriatric Units, Day hospital, Day Care Centre, Long Stay Care Institution - role of rehabilitation

**Advances in Geriatrics:**

1. Alzheimer's Disease
2. Parkinson disease/Ischemic Heart Disease/Stroke/COPD
3. Osteoporosis
4. Urinary Incontinence

5. Falls / Prevention of Fractures
6. Nutrition
7. Frailty and Sarcopenia
8. Liaison services – orthogeriatrics, vascular, surgery etc.
9. Stroke and Memory Clinics
10. Anti-ageing research

**End of life care (EOLC):**

1. Principles of Palliative Care at EOLC
2. End of Life Care process and pathways

**Advanced Directives and Advanced Care Planning**

1. Definition of Advance Directives (AD)
2. Writing a Will

Living will – Indian Scenario

## ***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.**

**A. Lectures:** Didactic lectures should be used sparingly. A minimum of 10 lectures per year in the concerned PG department is suggested. Topics 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 a week 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 a week 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. Bedside clinics:** Minimum - once a week.

Clinics/bedside teaching should be coordinated and guided by faculty from the department. Various methods like DOAP (Demonstrate, Observe, Assist, Perform), simulations in skill 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. A model of rotation during training is provided below. However, this scheme depends on availability of a particular super-specialty in the hospital/ medical college.

Geriatrics: 18 months

General Medicine: 3 months (optional)

Cardiology and Neurology: 2 months

Gastroenterology, Endocrinology, Nephrology, Psychiatry, Hematology/Medical Oncology, Physical Medicine & Rehabilitation, Rheumatology; Community Geriatrics: 1 month each

#### **G. (b). Posting under “District Residency Programme” (DRP):**

All postgraduate students pursuing MS/MS in broad specialities 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 3<sup>rd</sup> or 4<sup>th</sup> or 5<sup>th</sup> 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 : once a week
- Journal club : once a week
- Seminar : once a fortnight
- 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 3<sup>rd</sup> academic year.

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

Paper I: Basic sciences as applied to the Geriatrics

Paper II: General medicine including Psycho-geriatrics

Paper III: Core geriatrics

Paper IV: Recent advances, social geriatrics, rehabilitation

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

#### **Practical examination**

**Practical examination should be spread over one/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 (OSCE)
- 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. Brocklehurst's Text Book of Geriatric Medicine and Gerontology. Eds. TC Tallis, HM Fillit.
2. Oxford Textbook of Geriatric Medicine. Ed: J. Grimley Evans Source: Oxford University Press (OUP).
3. Hazzard's Principles of Geriatric Medicine & Gerontology: Editors- Jeffrey Halter, Joseph Ouslander, Mary Tinetti, Stephanie Studenski, Kevin High, Sanjay Asthana, William Hazzard.
4. Practice of Geriatrics: Editors - Edmund H. Duthie Jr., Paul R. Katz, Michael Malone.
5. Text Book of Geriatric Medicine. Published by Indian Academy of Geriatrics.
6. Basic Textbooks in Medicine and other specialities.
7. Allied Health books.

Access to UpToDate

**Journals**

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

**National Medical Commission**





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