# REGULATIONS AND CURRICULUM GOVERNING

# MD GERIATRIC MEDICINE PROGRAM

**(2021-22)**

**Name of the Constituent Unit/Centre: Yenepoya Medical College**




YENEPOYA

Deemed to be University

**Deralakatte, Mangalore, Karnataka.**

# NOTIFICATION FROM THE UNIVERSITY

YENEPOYA
(DEEMED TO BE UNIVERSITY)
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**NOTIFICATION – 42-ACM/2021 dtd.13.04.2021**

Sub: Curriculum of Competency Based Postgraduate Training Program for MD in Geriatric Medicine

Ref: Resolution of the Academic Council at its 42nd meeting held on 22.03.2021 vide agenda - 5

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The curriculum of Competency Based Postgraduate Training Program for MD, Geriatric Medicine course has been approved at the 42nd meeting of Academic Council held on 22.03.2021 and subsequently by the Board of Management at its 53rd meeting held on 23.03.2021.

**REGISTRAR**
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To:

The Professor & Head, Department of Geriatric Medicine

Copy to:

1. Principal, YMC
2. Controller of Examinations
3. File copy

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## CONTENTS


| S. No. | Particulars | Page numbers |
|---|---|---|
| 1. | Preamble | 3 |
| 2. | Goal | 3 |
| 3. | Subject Specific Learning Objectives/Learning Objectives | 3-5 |
| 4. | Subject specific competencies | 5-15 |
| 5. | Syllabus/Course Content | 15-36 |
| 6. | Teaching & Learning Methods | 36-37 |
| 7. | Assessment | 37-43 |
| 8. | Recommended Books | 44 |
| 9. | Annexure | |
| 10. | Blue Print | 45-47 |
| 11. | Model Question papers | 48-51 |
| 12. | Checklist | 52-66 |

# MD GERIATRIC MEDICINE PROGRAM

## PREAMBLE

Older (defined as people above 60 years) Indians 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 draft), 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. At one end we have frail elderly who will benefit from comprehensive care and rehabilitation, while on the other end we have geriatric population with incurable conditions who will benefit from palliative care approach. With the population ageing, we also need to focus on keeping the elderly active, fit and healthy and focus on not only physical health, but also social psychological and spiritual health. Hence specialized training in the field of Gerontology and Geriatric Medicine has become the need of the hour.

## GOALS

The **goals** of MD Geriatric Medicine Course are to create a cadre of health professionals in the care of the older people who will:

1. Provide comprehensive health care and rehabilitation of the elderly
2. Provide undergraduate and postgraduate training
3. Carry out research in geriatrics and gerontology

# PROGRAM OUTCOMES / SUBJECT SPECIFIC LEARNING OBJECTIVES

1. Perform a comprehensive assessment of an older person, including mood and cognition, gait, nutrition and fitness for surgery in an in-patient, home or community setting, including day hospitals.
2. Diagnose and manage acute illness in older adults in an in-patient setting, home and community setting where appropriate.

3. Diagnose and manage those with chronic disease and disability in an inpatient home, hospital and community setting.
4. Provide rehabilitation with the multidisciplinary team to older patients in an inpatient, home, hospital and community setting.
5. Organize and implement different National Health Care Programs for the older persons.
6. Plan the transfer of care of frail older patients from hospital to home settings.
7. Apply the knowledge and skills of a competent geriatrician in an intermediate care, home and/or community setting.
8. Assess and manage older patients presenting with the common geriatric problems:
   (a) falls with or without fracture (b) delirium (c) incontinence (d) poor mobility(e) dementia
9. Demonstrate competence in palliative care, orthogeriatrics, old age psychiatry and stroke care.
10. Demonstrate competence in basic research methodology, ethical principles of research, comprehensive scrutiny of medical literature and interest in basic science or clinical research.
11. Conduct research to improve health status of the older person and there by improve quality of life, to reduce disability and arrest or delay age related problems.
12. Expertise in some areas will develop throughout training, while others may require specific fulltime or sessional attachments to achieve the appropriate level of knowledge and skills. We propose to impart Palliative Care with emphasis on Geriatric Care workshop, workshops on Comprehehensive Geriatric Assessment, course in Clinical ethics and Research ethics, course in Vestibular disorders, and Psychodrama - as add on certificate courses.

# COURSE OUTCOMES:

1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management.
2. Completely interview the older adult and the care-giver and examine the patient and make a clinical diagnosis.
3. Appropriately order and interpret laboratory tests.

4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures.
5. Follow up of patients with medical problems and refer whenever required.
6. Manage common medical ailments and refer when required.
7. Independently perform common medical procedures safely and understand patient safety issues.

# SUBJECT SPECIFIC COMPETENCIES

## A. Cognitive Domain

The learner during, at the end of the course and thereafter during practice shall be able to:

1. Describe and define
   - anatomical and histological changes associated with ageing
   - physiology of ageing
   - biochemical, molecular, cellular, genetic theories of ageing
   - effect of ageing upon pharmacodynamics and pharmacokinetics
   - pathology associated with normal ageing and age associated disease processes
2. Acquire knowledge and art of history taking and physical examination.
3. Knowledge of appropriate differential diagnosis of various acute and chronic conditions in older adults
4. Describe and discuss the epidemiology, pathophysiology, clinical evaluation and management of various geriatric syndromes (dementia, frailty, falls, urinary and fecal incontinence, immobility)
5. Describe and discuss the pathophysiology, diagnose, management and preventive strategies of common types of leg and pressure ulceration, surgical and other wounds in older patients.
6. Discuss and describe preoperative assessment of older adults undergoing elective surgeries and the use of various tools to predict postoperative morbidity and mortality.
7. Demonstrate knowledge and skills to assess and manage older patients with fragility fracture, particularly hip fracture and manage fracture risk.
8. Knowledge and skills to assess and manage older patients with gynaecological problems.
9. Describe and discuss the epidemiology, patho-physiology, clinical evaluation and care for patients with acute stroke and chronic stroke related disability.

10. To understand the speech therapy plan for older people with aphasia, dysarthria and also to assess swallowing in older person.
11. Knowledge of evaluation and management o folder patients with movement disorders.
12. Knowledge on evaluation of older adults presenting with dizziness/vertigo and various treatment modalities.
13. Describe and discuss the epidemiology, clinical evaluation, use of various screening and diagnostic tools and plan management of older patients with psychiatric conditions
14. Acquire knowledge of Beer`s criteria, STOPP and START criteria.
15. Discuss and describe laboratory reports, radiological reports, ECG, Echocardiography, and stress test reports, PFT reports, Endoscopy reports, Nerve conduction study reports, EMG and EEG reports, audiogram reports, bone mineral density reports, biopsy, FNAC and immunohistochemistry and flow cytometric reports.
16. Describe and discuss screening tests, their indications and interpretation in older patients and the benefits of the same.
17. Knowledge of health promotive activities such as exercise, nutrition, vaccination, cessation of tobacco use and alcohol consumption, and other active ageing measures.
18. Acquire theoretical knowledge of nursing needs of older patients.
19. Discuss and describe the epidemiology, clinical evaluation, pharmacological management and physiotherapeutic plans for common musculoskeletal conditions (osteoarthritis, cervical and lumbar spondylosis, frozen shoulder).
20. Describe the various assessment tools &management strategies for physical symptoms such as pain, dyspnoea, gastrointestinal symptoms, wound care, feeding difficulty in palliative care setting.
21. Knowledge of the assessment and palliative management of older patients with malignant and non-malignant life-limiting diseases.
22. Know the assessment tools and management strategies for psychological distress among geriatric patients and their caregivers in a palliative care setting.
23. To understand the needs of older patients admitted in old age homes, hospices and palliative care and end-of-life care centres.
24. Discuss and describe the assessment tools to assess socioeconomic needs of the elderly and arrange for interventions

25. Discuss and describe the definition of elder abuse and appropriate action to combat social issues related to elder abuse, loneliness and depression.

## B. Psychomotor Domain

The learner during, at the end of the course and thereafter during practice shall be able to:

1. Demonstrate ability to obtain valid informed consent from the patient or care-giver when appropriate.
2. Obtain relevant focused history, perform physical examination, perform comprehensive geriatric assessment and use appropriate screening tools to assess & manage all issues pertaining to geriatrics.
3. Demonstrate the ability to appropriately diagnose, evaluate and prescribe treatment and preventive strategies for older adults and communicate the same.
4. Prescribe, review and monitor appropriate medications.
5. Diagnose and manage acute illness in older patients in various settings.
6. Diagnose and manage chronic disease and disability in older patients in hospital and home settings.
7. Demonstrate competence in managing/controlling infection in patients, including risk of cross-infection.
8. Demonstrate competence in recognizing, diagnosis and managing delirium in older patients.
9. Perform assessment and appropriate management of older adults presenting with cognitive decline.
10. Demonstrate ability to identify, evaluate and manage the needs of a frail older adult.
11. Evaluate and manage older patients presenting with falls (with or without fracture).
12. Demonstrate competency to recognize and diagnose frailty and identify treatable conditions leading to frailty, and institute nutritional and physiotherapeutic interventions and educate care givers on the progress of a frail elderly.
13. Perform assessment of nutritional status of older adults and devise a nutritional support strategy.
14. Demonstrate assessment of cognition, mood, nutrition, fall risk, incontinence, mobility, vision, hearing, dentition and functional status using appropriate tools.
15. Demonstrate the ability to communicate the diagnostic and therapeutic plans to the patient, relatives &caregivers.
16. Perform audit of clinical practice.

17. Work effectively with a team and put the quality and safety of patient care as a prime objective.
18. Demonstrate simple physical exercises to older people for common musculoskeletal symptoms and to promote active ageing.
19. Demonstrate competency in evaluation or movement disorders and management of Parkinson's disease.
20. Ability to assess and manage older patients with psychiatric conditions.
21. Demonstrate the ability to assess and advise appropriate palliative care to older patients with malignant and non-malignant life-limiting diseases (such as end stage heart, lung, kidney and liver disease and patient with stroke, dementia and advanced stage Parkinson's disease and other immobile and frail elderly). And also provide end-of-life care to older adults reaching last few weeks of life.
22. Ability to effectively recognise, assess and manage acute and chronic pain in older people.
23. Demonstrate ability to assess rehabilitative needs of the elderly with disabilities and arrange for rehabilitation using appropriate assistive devices.
24. Competencies with reference to **laboratory data interpretation**, **action and communication with the patient**:

- Routine biochemical, hematological and microbiological interpretation.
- Concept of normal range.
- Nutritional Assessment using body composition analysis and lab tests.

**Investigation of Heart diseases in old age**

- Cardiac Arrhythmias-Holter, Electrophysiology
- Coronary Artery Disease- Echocardiography, Stress tests and Coronary angiogram
- Acute Myocardial Infarction- ECG, Cardiac biomarkers, Echocardiography
- Hypertension and Hypertensive Heart Disease-Investigations for secondary cause

- Postural Hypotension-autonomic function assessment
- Congestive Heart Failure-echocardiography, Chest X-ray and Nitro pro BNP
- Aortic aneurysm- Doppler, CT angiogram
- Bacterial endocarditis-blood culture report and echocardiography
- Peripheral vascular disease-Doppler and angiogram
- Deep Venous Thrombosis-Venous angiogram, D-dimer and pulmonary CT angiogram and ventilation perfusion scans.

**Investigations of the Gastro-intestinal tract**

- Disorders of the Mouth/loss of teeth - X-rays for dental problems, tests for salivary secretion.
- Upper GI endoscopy and H Pylori tests.
- Disease of the Pancreas -Pancreatic function tests, serum amylase, lipase, CT and ERCP
- Diseases of the Small intestine-Barium studies and Biopsy using Crusby capsule and Angiogram.
- Diseases of the Large intestine - colonoscopy, proctoscopy, sigmoidoscopy, stool for occult blood, manometric studies and biopsy.
- Disease of the liver and biliary system-LFT, Fibroscan, Ultrasound, Hepatitis antibodies and interpretation.

**Investigations of the Genito-urinary tract**

- Ultrasound, Urodynamicstudies, Cystoscopy
- Urinary Tract Infection –Urine culture data interpretation, MIC and breakpoint and pharmacokinetics of antibiotics.
- Benign hypertrophy and Cancer of the prostate –USG, FNAC, Biopsy, PSA
- Urinary retention- USG, Urodynamic studies.

**Investigations and management of Endocrine disorders**

- Diabetes-HbA1c,8 point glucose, RFT, Urinemicroalbumin, Urine albumin Creatinine ratio, C peptide, GAD antibodies and Islet cell antibodies, Tranasaminases, ECG, Echocardiography, Ultrasound abdomen.
- Thyroid diseases - TFT,TPO antibodies, Radioactive iodine studies, Thymoglobulin, Thyroid ultrasound, FNAC and Biopsy.

**Investigation and management of Neurological disorders**

- CT, MRI,MR angiography, diffusion studies, EEG, Nerve conduction studies, EMG, Autoantibodies in neurological diseases, CSF analysis, Evoked potentials.

**Investigation for Musculoskeletal disorders**

- Osteoarthritis - X Ray, MRI, Arthroscopy and joint aspirate and its value
- Osteoporosis - X Rays, Ultrasound, DEXA scan, Vitamin D3

**Investigation for Respiratory disorders**

- COPD/bronchial asthma/ Corpulmonale/ acute and chronic respiratory failure -BG, PFT, Chest X-ray, CT chest, ECG, Echo, Sputum culture interpretation.
- Tuberculosis - Chest X- Ray, CT, biopsies, sputum AFB, CB NAAT,AFB culture and sensitivity and interpretation and other newer tests.
- Pneumonia -Chest X-ray, CT Thorax, Sputum culture and interpretation, Investigations for pneumonia severity.
- Lung cancer -Bronchoscopy, sputumcytology, histopathology, value of molecular studies for personalised treatment.

**Oncology Investigations**

- Early detection of malignancy, cancer screening tests and interpretation, tumour markers

# COMPETENCY LIST FOR POSTGRADUATE

## Description of competencies (P= Performs independently, S=Performs under supervision and O=Observes)

| **Clinical Assessment Skills** | **Number** |
|---|---|
| • Elicit a detailed clinical history including Comprehensive Geriatric assessment | 10 (S)200(P) |
| • Dietary recall, calorie and protein estimation and carbohydrate count and use of mini-nutrition questionnaire | 10(S)200(P) |
| • Perform a thorough physical examination including Anthropometry | 10(S)200(P) |
| • Detailed assessment of cognition | 5 (S)50(P) |
| • Assessment for depression and anxiety | 5(S)50(P) |
| • Falls Assessment and osteoporosis management | 5(S)50(P) |
| • Urinary Incontinence evaluation | 5(S) 50(P) |
| • Geriatric Vaccination | 5(S)50(P) |
| • Home care patient management | 5(S)50(P) |
| • Community camps | 25(P) |
| • Breaking bad news | 10(S)10(P) |
| • Palliative care needs assessment | 5(S)100(P) |
| • Preoperative assessment | 50 (S)50(P) |
| • Optic fundi examination | 5 (S)50(P) |
| • Per rectal examination | 5(S)20(P) |
| • ECG reporting | 50(S)300(P) |
| • Chest X ray interpretation | 50(S)200(P) |
| • Orthopedic X-ray reading | 50(S)100(P) |
| • Pleural tap | 2(S)10(P) |

| | |
|---|---|
| • Peritoneal tap | 2(S)10(P) |
| • Pericardiocentesis | 2(O) |
| • Lumbar puncture | S(5)15(P) |
| • Resuscitation of shock | 5(S)50(P) |
| • Basic Life Support | 5(S)30(P) |
| • Advanced Life support | 5(S)20(P) |
| • Central line, CVP | 2(O)5(S) |
| • Blood and blood component (Platelet, FFP, etc.) transfusions | 10(P) |
| • Arterial puncture for ABG | 2(S)20(P) |
| • Liver biopsy | 1(O)2(S) |
| • Bone marrow aspiration and biopsy | 2(S)10(P) |
| • Insulin injection techniques demo to patients | 1(S)30( P) |
| • Diabetes education including diet and foot care counseling | 1(S)30(P) |
| • Glucometer usage | 30(P) |
| • Urinary Catheterization | 15(P) |
| • Ryle's, Stomach tube use | 20(P) |
| • Nebulization | 30(P) |
| • Inhaler therapy/Rotahaler demonstration | 30(P) |
| • Oxygen delivery | 50(P) |
| • Peritoneal dialysis | 2(O) |
| • Haemodialysis | 20(O) |
| • Monitoring a sick person | 50(P) |

| | |
|---|---|
| • Endotracheal intubations | 2(S)20(P) |
| • Using a defibrillator | 2(S)10(S) |
| • Pulse oximetry | 50(P) |
| • Intercostal tube placement with underwater seal | 1(O)1(S) |
| • Sedation in delirium | 2(S)20(P) |
| • Analgesia in severe pain | 2(S)20(P) |
| • Assessment of brain death | 2(O)10(S) |
| • Communication regarding cornea donation | 2(S)5(P) |
| • End of life care with communication with patient and relatives | 2(S)10(P) |
| Cardiac skills | |
| • Echo cardiography | 10(O)50(S) |
| • Coronary angiograms | 05(O) |
| • Angioplasty assisted | 05(O) |
| • EEG observed and report interpretation | 05(O) |
| • NCV | 05(O) |
| • EMG | 02(O) |

## C. Affective Domain

**The Post graduate student during, at the end of the course and thereafter during practice shall be able to:**

1. Function as 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. Quality and safety of patient care should be the prime objective.
2. 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 confidentiality, information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.
4. Demonstrate ability to break bad news with empathy to the patient and the caregivers and recognise and manage emotions of patient and caregiver
5. Manage an angry or aggressive older a dultor aggressive caregiver by effective communication.
6. Demonstrate professionalism, empathy while dealing with patients and care givers.
7. Demonstrate ability to understand and discuss the risks of treatments with patients and relatives so that they are aware of risks and able to make decisions.
8. Manage difficult behavioural and psychological symptoms of a dementia patient and educate the caregiver to handle difficult behaviour.
9. Counsel elderly on life style modification, risk factor control, medication compliance, use of devices and recognize the barriers.
10. Educate older patients on chronic disease management such as diabetes, hypertension, asthma, COPD and CKD and self-care.
11. Demonstrate ability to counsel older adult on nutrition, exercise, cessation of smoking and alcohol.

12. Identify the physical, psychosocial, spiritual and nursing needs of the immobile elderly and in palliative care setting.
13. Know and apply the principles and laws regarding medical ethics and confidentiality.
14. Demonstrate understanding and effectively communicate advanced directives with reference to end of life care and motivate the elderly for cornea and other organ donation in cases of brain death.
15. Develop effective palliative care and end of life communication and also understand and plan interventions to reduce caregiver burden.
16. Deliver care to improve quality of life at all stages of life including near end of life.
17. Demonstrate the ability to assess the elderly for goals of life and wishes if any and address all his concerns when he is suffering from incurable disease.
18. Counseling the family members with the understanding of family dynamics and its influence on the older patient in decision for health care.
19. Demonstrate the understanding of group dynamics and work with the team caring for the older patient.

# SYLLABUS

## The broad outline of the course contents is given below:

Paper I: Basic Sciences as applied to Geriatrics and general Medicine

Paper II: General Medicine topics relevant to Geriatric Medicine

Paper III: Clinical Geriatrics

Paper IV: Recent advances in Geriatrics including recent guidelines& newer drugs

## Paper I: Basic Sciences as applied to Geriatric and general medicine:

- Biology of human ageing, Epidemiology of human ageing, Immunology of human ageing, Effect of ageing on different organs, Death
- Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology, Pathology, Forensic medicine, Nutrition - as applicable to General medicine and Geriatric medicine.

## Paper II: General Medicine topics relevant to Geriatric Medicine:

- Clinical General Medicine in relation to all the systems such as Cardiology, Pulmonary Medicine, Gastroenterology, Endocrinology, Nephrology, Neurology, Rheumatology, Haematology and Oncology, Toxicology and Infectious diseases, Sarcopenia, Nutrition and Unique nutritional issues, Psycho-geriatrics.

## Paper III: Clinical Geriatrics:

- Clinical Geriatrics and syndromes unique to geriatric medicine such as frequent falls, cognitive impairment, depression, urinary incontinence, sleep disorders, constipation and diarrhoea, postural hypotension, syncope, vestibular disorders, musculoskeletal problems, frailty, nutritional disorders common in elderly, common diseases of the elderly related to cardiology, neurology, respiratory, gastrointestinal system, cancer in elderly, haematology, rheumatology and musculoskeletal disorders, infections common in elderly, toxicology relevant to geriatrics, emergencies in geriatric practice, critical care in geriatric practice.
- **Allied specialties**: Orthopaedics, Urology, Gynaecology, Ophthalmology Otorhinolaryngology, Dentistry, Psychiatry, Pre and post-Anesthetic evaluation and management, Legal, Ethical and Economic aspects.
- **Geriatric Palliative care**: Palliative care, supportive care to elderly with failing organs, terminal care, end of life care, physical, psychological, social, spiritual, ethical, legal, nursing, physiotherapeutic needs of older adults with incurable diseases, caregiver burden in the care of the elderly.

## Paper IV: Recent advances including in geriatrics guidelines newer drugs :

- **Recent advances:** Recent advances pertaining to Geriatric Medicine, Novel disease, Novel drug, Novel device, New guidelines for management.
- **Preventive geriatrics:** Active ageing, Vaccination, NCD risk factors and management, communicable disease prevention in older people, social interventions and support for independent living, prevention of elder abuse, loneliness, prevention of dementia and depression in older people.

- **Rehabilitation:** Rehabilitation approaches, Principles of Rehabilitation - assessment, goals, priorities and monitoring progress, Rehabilitation in old age - special features in relating to aging, multiple pathology, Policies, expectation, carers, acute illness, social and financial support, Clinical evaluation of rehabilitation - impairment, disability and handicap, Prevalence of disability, types of disability, Assistive devices, Legislative aspects of rehabilitation, Functional assessment tools and limitations, Rehabilitation as Team work - Team leadership, therapist, physiotherapy, occupational therapy, social worker, physician and nursing personnel, Self-care evaluation and management of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) - Self care Assessment Tools.

The details of the course contents under each of the four papers are outlined herewith:

# PAPER I: BASIC SCIENCES AS APPLIED TO GERIATRICS AND GENERAL MEDICINE

## Gerontology:

- Normal and abnormal aging, ageing physiology and pathology
- Theories of aging
- Metabolic and Structural aspects of aging
- Biochemical changes in the Normal aging Brain
- Aging in tissues and cells
- Atherosclerosis and aging
- Ecology of Human Senses
- The milieu interior and aging, How elderly are different
- History taking in elderly and barriers to obtaining proper history
- Rationale of doing investigations in elderly
- Interpretation of results
- Weak link system
- Homeostenosis
- Age related changes in Immune system and approach to older patients with an infectious disease

## Demography and Epidemiology of Aging

- Global demographic transition and its impact on the country, individuals and society
- Greying of nations
- Population aging in India and causes of national concern

## Nutrition

- Common sources of various nutrients
- Factors influencing nutritional status in older adults
- Rules for formulating diet for elderly individuals
- Common nutrition related health disorders and their control and management
- Social and cultural factors in nutrition and health
- Important National Nutritional Programmes
- Nutritional surveillance, education and rehabilitation
- Tools for nutritional assessment
- Overfeeding syndrome, Over nutrition and obesity in Elderly
- Nutrition Therapy –Oral, Enteral and Parenteral
- Nutrient deficiencies including Vitamin D deficiency and its implication in Geriatric health
- Medical nutritional therapy for Diabetes, Chronic kidney disease, hepatic failure, COPD end stage disease, Heart failure, Frailty
- Tools and tests for nutritional assessment
- Diet plan for the elderly with poor nutritional status

## Pharmacokinetics and Pharmacodynamics

**Prescribing in the elderly**

- Pharmacokinetics in the elderly
- Pharmacodynamics
- Drug Selection and Dosage
- Drug Interactions
- Adverse Drug Reactions
- Drug Compliance
- Drug Misuse/Drug abuse

- Polypharmacy
- Beer`s criteria, STOPP and START criteria
- Safe antibiotics in elderly, antibiotic policy
- Alternate systems of Medicine

**Anatomy, Physiology, Biochemistry, Microbiology, Pharmacology Pathology, Forensic Medicine -**Relevant to General Medicine and Geriatric Medicine.

# PAPER II: GENERAL MEDICINE TOPICS RELEVANT TO GERIATRIC MEDICINE

## Introduction to Clinical Medicine:

## Syndromic approach to common symptoms in Medicine

- Headache, Chest pain, acute abdominal pain and chronic abdominal pain, vertigo, dizziness, vomiting, breathlessness, acute febrile illness, PUO, back ache, fatigue, weight loss, loss of appetite, oedema, cough, hemoptysis, constipation, urinary retention, urinary incontinence, diarrhoea, itching, acute confusion, frequent falls, insomnia.

## Infection and Immunity:

- Normal immune mechanisms
- Risk factors for infection
- Common infections - viral respiratory infections, lower respiratory tract infection/pneumonia, UTI, tuberculosis, diarrhoea and gastroenteritis, skin infections, meningitis, endocarditic, septicaemia, PUO, Herpes Zoster, Arbovirus infections, Malaria and other parasitic infections, Leptospirosis, Rickettsial infections, Fungal infections, Mycoplasma infections, HIV in elderly.
- Community acquired infection
- Hospital acquired infection and Infection control in hospital

**Gastrointestinal Disorders:**

- Diseases of oesophagus

- GERD and its management
- Peptic ulcer diseases and its management
- Nausea and vomiting in elderly, Upper GI bleed
- Disorders of lower GI tract and their management - Malabsorption disorders in elderly
- Irritable Bowel syndrome
- Inflammatory bowel disease
- Chronic diarrhoea and acute diarrhoea
- Vomiting
- Constipation
- Lower GI bleed Tuberculosis of intestine Gastrointestinal motility disorders

**Disorders of liver, biliary system and pancreas**

- Normal physiology of liver and biliary tract, bile production and flow
- Physiological and biological alterations in old age
- Common liver function tests
- Liver infections - viral, bacterial, parasitic, fungal
- Drug induced liver disease
- Cirrhosis o liver and portal hypertension
- Tumours of liver
- Diseases of gall bladder-acute and chronic cholecystitis, gall stones
- Diseases of bile duct
- Tumours of biliary tract
- Diseases of pancreas-acute and chronic pancreatitis
- Pancreatic malignant tumour
- Alcoholism and its ill effects

**Respiratory System:**

- Normal respiratory physiology and applied aspects of respiratory system
- Pulmonary function tests
- Acute upper respiratory tract infections
- Pneumonia
- Pulmonary Tuberculosis and RNTCP guidelines

- Non infective disorders- bronchial asthma, COPD, chronic Corpulmonale, interstitial lung disease
- Granulomatous diseases of lung - Sarcoidosis Pulmonary manifestations of systemic diseases Drug induced lung diseases
- Diseases of pleura, mediastinum and diaphragm
- Lung cancer and other intra thoracic malignancies
- Effects of smoking, counselling on smoking cessation and dead diction
- Pulmonary Embolism.

**Cardiovascular Diseases:**

- Normal physiology, anatomy of cardiovascular system Atherosclerosis, Coronary artery disease
- Hypertension and Hypotension
- Congestive cardiac failure –heart failure with low ejection fraction and heart failure with preserved ejection fraction
- Ischaemic heart disease
- Cardiac arrhythmias-tachy and brady arrhythmias, heart blocks
- Valvular Heart Diseases
- Infective endocarditic
- Myocardial and pericardial diseases
- Diseases of aorta
- DVT and pulmonary embolism
- Peripheral arterial and venous diseases
- Cardiac drugs and drug interactions

## Endocrinological Disorders:

- Principles of endocrinology-mechanism of action of hormones and receptors
- Assessment of endocrine function
- Diabetes mellitus - prevalence, aetiopathogenesis, classification, clinical presentation, investigations, non diabetic hyperglycaemia, management of Type II DM, special considerations in elderly, chronic complications-micro and macro vascular, lifestyle

changes, diet, exercises, oral hypoglycaemic, insulin therapy, diabetic ketoacidosis, Hypoglycaemia, foot care

- Assessment of thyroid function, Hyperthyroidism Hypothyroidism, Thyroid malignancies
- Adrenal insufficiency and Cushing`s syndrome
- Disorders of the pituitary, SIADH and diabetes insipidus
- Multiple Endocrine Neoplasia
- Osteomalacia, Disorders of parathyroids
- Approach to hypercalcemia and hypocalcemia

## Genitourinary Disorders:

- Erectile dysfunction
- Andropause, Menopause, Genitalprolapse, Pruritusvulvae, Vaginaldischarge
- Clinical evaluation of the patient, Current concepts in management of Hormone Replacement Therapy
- Urinary Incontinence, Other urinary problems –Dysuria, frequency, polyuria, oliguria

## Nephrology and Fluid and Electrolyte balance:

- Normal distribution of water and electrolytes, factors maintaining homeostasis, acidosis, alkalosis
- Fluid and electrolyte imbalance in elderly - water, sodium, potassium imbalance
- Evaluation of a patient with renal disease
- Interpretation of lab tests
- Urinary Tract Infection
- Renal failure –Acute Kidney Injury, pathogenesis, clinical features, conservative management, diet
- Chronic Kidney Disease - assessment, approach, Renal replacement therapy,
- Drugs and kidney
- Basics of renal transplantation
- Diseases of prostate - BPH, Prostatitis, prostatic abscess, Ca prostate
- Organ donation
- Concept of brain death and cadaver transplantation

- Immunosuppressive drugs

## CNS and Neuropsychiatric disorders:

- Applied aspects of anatomy- Brain, Spinal cord -Evaluation of CNS diseases
- Clinical approach to –acute confusional state, dizziness in elderly, falls, headache, seizure, aphasia, sleep disorders, dementia.
- Cerebrovascular disorders – classification of strokes, is chaemic CV diseases, clinical features, prevention of stroke, management.
- Neurodegenerative diseases –Parkinson`s disease and other movement disorders, dystonia, chorea and familial essential tremors
- Alzheimer`s disease and other dementias
- Cerebellar degeneration and spinocerebellar ataxias
- Epilepsy in older adults
- Neuroinfections –Meningitis, encephalitis, brain abscess
- Brain trauma
- Spinal cord diseases
- Radiculopathy
- Peripheral neuropathy
- Myopathy in older adults
- Myasthenia and other disorders of neuromuscular junction
- Cranial nerve disorders
- Coma – causes, neurological assessment, management, general care of patient

## Psychogeriatrics:

- Depression and psychiatric disorders
- Impact of aging on health and psychiatric illness
- Epidemiology and classification of depression
- Assessment of depressed patient, investigation and management
- Other psychiatric disorders – anxiety disorder, post traumatic stress disorders, obsessive compulsive disorder, hypochondriasis, somatisation disorder, paranoid disorder
- Schizophrenia

- Suicide
- Mental Health Act
- Elder abuse
- Pathophysiology of brain in normal aging and dementia
- Cognitive impairment and dementia
- Types of dementia
- Alzheimer's disease
- Delirium
- Sleep disorders- causes of insomnia, effect of drugs
- Alcoholism, smoking and substance abuse by older persons

## Musculoskeletal disorders

- Osteoporosis – epidemiology, pathophysiology, clinical features, screening, prevention, treatment, special situations-drug induced
- Degenerative joint diseases – osteoarthritis
- Inflammatory and metabolic disorders – Rheumatoid arthritis, immunological mechanism, SLE in older adult
- Progressive systemic sclerosis
- Vasculitic disorders in older adults
- Mixed connective tissue disorders – Systemic sclerosis
- Myositis
- Fibromyalgia
- Crystal arthritis, Chondrocalcinosis
- Nutritional osteomalacia
- Lower back pain, neck pain and degenerative spine disease
- Fractures and musculotendinous disorders - Fracture neck of femur, trochanteric region of femur, lower end of radius and other areas
- Frozen shoulder, painful arc syndrome, polymyalgia rheumatica, tear of supraspinatus tendon
- Bone tumours- Multiple myeloma Metastatic bone tumour

## Haematological Disorders

- Haematopoiesis
- Anaemias- causes, clinical features and laboratory approach and treatment
- Haematological malignancies - Leukaemias and its management, Acute leaukemias, Myelodysplastic syndrome, Myeloproliferative disorders and Myelofibrosis
- Autoimmune blood disorders –Hemolyticanemias and Immune thrombocytopenic purpura
- Other platelet disorders
- Hemophagocytic Lymphocytic Histiocytosis (Macropahage activation syndrome)
- Coagulopathy
- Hyper coagulable state
- Transfusion medicine
- Recognition and management of transfusion disorders
- Transfusion in patients with Haematological diseases (Component therapy)
- Therapeutic Plasmapheresis
- ABVP, CHOP Chemotherapy, Supportive therapy

## Special Senses disorders:

- **Visual impairment**– causes, socio-cultural implications, National Programme for Control of Blindness, Rehabilitation
- **ENT disorders:**
  - ❖ Disorders of balance – dizziness, falls, management and rehabilitation
  - ❖ Nasal dysfunction
  - ❖ Olfactory disturbance
  - ❖ Laryngopharyngeal disorders – swallowing disorders in elderly
  - ❖ Speech related problems – hoarseness of voice
  - ❖ Sleep disorders
  - ❖ Head and neck malignancy, neck masses in geriatrics
  - ❖ Visual and hearing aids

## Diseases of oral cavity:

- Importance of oral health in geriatric population
- Age changes in oral tissues

- Dental caries, Periodontal diseases, Edentulousness, Artificial dentures, Oral mucosal lesions
- Oral cancers and pre-cancers
- Salivary gland diseases
- Problems in delivery of oral health care to geriatric population

## Medical oncology

- Basics of oncology
- Normal cell, Cancer cell- Cell cycle and its Regulation
- Molecular Biology Techniques such as Southern blot, Northern blot, Western blot, Karyotyping, FISH, PCR
- Metastatic cascade, Angiogenesis, Precancerous conditions
- Treatment decisions – surgery, radiotherapy, chemotherapy
- Basic principles of Chemotherapy- Drug classification
- Drug action side effects
- Radiotherapy
- Structure of Atom, radio activity and its effect on cell, side effects
- Bone marrow transplant
- Newer Modalities in Therapy and Supportive care
- Biologic Response Modifiers
- Gene therapy
- Stem cell transplant newer antibiotics Nutritional support Growth factors
- Treatment related toxicity and quality of life
- Cancer clinical trials in elderly

## Radio diagnosis

- General - The importance and scope of different radiological examinations in the diagnosis, treatment and management of various diseases.
- Newer imaging modalities - Different imaging modalities including the newer imaging techniques – ultrasonography, colour Doppler imaging, colour flow mapping, computed Tomography, MRI, Nuclear imaging, PET and SPECT- basic principles

- Protocols to be followed while referring for various routine investigations-Barium studies, Ultrasonography, Computed tomography, MRI imaging
- Nuclear medicines investigations
- Various contrast investigations and contrast materials used in imaging techniques and adverse reactions
- Interpretations of plain, contrast X-rays, Ultrasonography, CT, MRI& NM

# PAPER III: CLINICAL GERIATRICS

## Geriatric Medicine:

- How are older patients different?
- Common patterns of disease in old age
- Alteration in pain and temperature responses
- Weak link system
- Missing Symptoms
- Complications of Illness
- Non-specific presentations
- Masking by known disease
- Frailty
- History taking in the elderly
- Physical Examination of the old patient

## Investigations in the elderly:

- Policy and interpretation
- Radiological, Haematological& Biochemical investigations
- ECG
- Urinalysis
- Radio isotope tests
- Bone Scan
- Imaging – Ultrasound, CT Scan, MRI,PET scan
- How much to investigate?
- Concept of Normal range and Homeostenosis

## Geriatric Giants

- Frequent falls
- Gait and balance issues in older adults
- Immobility in the elderly
- Neurocognitive Disorders –approach
- Urinary incontinence - pathophysiology
- Modern Geriatric giants –Frailty, Sarcopenia, Anorexia of aging, Cognitive impairment.
- Polypharmacy

## Systemic Medicine disorders common in the elderly and approach to

## Cardiovascular System:

- Physiology and Pathology of Cardiovascular system in old age
- Investigation of Heart Diseases in oldage
- Cardiac Arrhythmias- a trial fibrillation, sick sinus syndrome
- Coronary Artery Disease and Acute Myocardial Infarction
- Hypertension and Hypertensive Heart Disease
- Postural Hypotension
- Valvular Heart Disease-Aortic stenosis
- Chronic Congestive Heart Failure
- Aortic aneurysm
- Bacterial Endocarditis
- Peripheral Vascular Disease
- Deep Venous Thrombosis and Pulmonary Embolism

## Endocrine and Metabolic Disorders:

- Changes with aging
- Diabetes Mellitus
- Diseases of the Pituitary, Parathyroid and Thyroid
- Obesity
- Sexual dysfunction
- Disorders of Sodium, Potassium, Calcium, Magnesium and Zinc
- Disturbances of Fluid Metabolism

- Hyperpyrexia / Heat Stroke

## Central Nervous System:

- The Aging Brain
- Vascular lesions of the Central Nervous System
- Dementia
- Degenerative disorders including Parkinsonism
- Head Trauma
- Infections of the Nervous System
- Epilepsy
- Syncope in the elderly
- Peripheral Neuropathy
- Disorders of Spinal cord and Nerve Roots
- Neoplasia

## Genitourinary System:

- Structural & functional changes with aging
- Aging and Sexuality
- Changes in kidney due to aging
- Acute and Chronic Renal Failure
- Infections of the Genito-urinary Tract
- Diseases of the Bladder and Prostate
- Urinary Incontinence
- Aging changes in the Genital Tract
- Post-menopausal bleeding
- Gynaecological disorders in the elderly

## Disorders of the Special Senses:

- Aging changes in the ear, nose, Diseases of outer and middle ear Hearing loss in geriatric population
- Vertigo and vestibular disorders
- Disorders of the Eye

- Disturbance of Taste and Smell
- Dental Problems

## Infections in the Elderly:

- Host Defences– Natural Barriers, White Cell response, Immunemechanism
- Age related changes in immune mechanisms
- Atypical presentations of infection
- Approach to an elderly with suspected infectious disease
- Diagnosis of Fevers, Urinary Infection - Diagnosis and Treatment
- Pneumonias - Cause, Diagnosis and Treatment, Septicemia, Bacterial Endocarditis
- General principles of antibiotic therapy in old age and their rational use
- Immunization in old age
- Health education to patient, caretaker and family members for prevention of infection

## Gastro-intestinal system:

- Normal age-related changes in GI tract Disorders of upper GI tract
- Investigations of the Gastro-intestinaltract
- Disorders of the mouth
- GERD / HiatusHernia
- Acid Peptic Disease
- Disease of the Pancreas
- Diseases of the small Intestine
- Diseases of the large Intestine
- FecalIncontinence
- GIMalignancy
- Disease of the liver and BiliarySystem
- Diarrhoea in the elderly –acute/chronic
- Constipation – Prevention and Management

## Respiratory System:

- Changes with age
- Infections of the Respiratory System

- Bronchial Asthma, Chronic Obstructive Airway Disease, Corpulmonale
- Bronchogenic carcinoma
- Respiratory Abnormalities in Extra-pulmonary conditions
- Respiratory Failure

## Musculoskeletal System:

- The aging joints
- Degenerative Joint Disease
- Gout/Pseudo-gout
- Rheumatoid Arthritis
- Infective Arthritis
- Myositis/Myopathy
- Polymyalgia Rheumatica/ Temporal Arteritis
- Osteoporosis
- Osteomalacia
- Common fractures in elderly – vertebral, hip

## Hematopoietic System:

- Changes with aging
- Anemia in the elderly
- Leaukemias and Lymphomas
- Para-proteinaemia
- Myelodysplastic syndromes
- Disorders of Haemostasis

## Dermatology:

- Aging skin
- Senile purpura
- Bedsores
- Pruritus/Intertrigo
- Cancers/benign lesions
- Pemphigus/pemphigoid
- Herpes Zoster

- Leg ulcer

## Malignancy in old age:

- Incidence of cancer in elderly, biology of aging process vis-à-vis cancer
- Incidence, Clinical Significance, Presentation, Investigation, staging and Management of common malignancy in older person, and Counselling
- Cancer screening and identification of high risk patient

## Surgery in the Elderly:

- Pre-operative Assessment, Priorities for surgery, Surgical Emergencies, Fractures, Pathological fractures, Benign lesions, Gangrene - Amputation, Elective Surgery, Post-operative problems and Management, Anaesthesia in old age.

## Palliative care & Ethical Issues:

- Concept of palliative care
- Symptom Management
- Pain management
- Nursing care in terminally ill patients
- Physiotherapy support in palliative care
- Psychological issues
- Social issues
- Ethical and legal issues
- Practical issues and bereavement
- Breaking bad news
- Bereavement
- Quality of life assessment and improvement
- Right to die
- Euthanasia
- End of life care, communication
- Advance health care directives, Living will
- Organ donation
- Models of palliative care

- Palliative care in dementia and end stage Parkinson's disease
- Supportive care for the elderly with failing organ systems
- Supportive care for the frail elderly
- Supportive care for the immobile elderly

- Palliative care of elderly admitted to ICU
- Care of the chronically ill, Care of patients with terminal illness
- Nursing homeplacement
- Care giver burden Alternate therapy in palliative care –Homeopathy, Physiotherapy, Music therapy, Ayurveda
- Spiritual issues in palliative care
- Religion and Illness
- Legal and ethical aspects of palliative care
- Withdrawing or withholding life support, the legal and ethical way

# PAPER IV RECENT ADVANCES IN GERATRICS INCLUDING GUIDELINES &NEWER DRUGS

## Social Geriatrics:

- Types of Family - Joint family system- promotion of Joint Family System
  Role of Elders and the younger generation
- Isolation, loneliness and dependency - Dependency ratio -Generational equality
- Social changes due to urbanization and industrialization with respect to Elders
- Financial aspects - sources of income, old age pension
- Role of Government and NGOs in up liftment of socio-economic status of older people
- International and national policies on ageing and old age care
- Geriatric Service for the Elderly in Western Countries and in India - Structure of geriatric Service - Family as basic Unit - Models of Geriatric Service
- Day Hospital, Day Care Centre, Long Stay Care Institution, Home for the Aged
- Functions of the Day Hospital - Staff and patients of day Hospital

- Nursing Home in Western Countries - Goals of Geriatric Care – Need for similar services in India
- Psycho-geriatric services - structure and facility - Domiciliary Assessment and community Care
- Terminal Care Services - Social and Spiritual problems in Terminally ill
- Ethical Issues in Geriatric Medicine - Self determination and decision making in treatment options - Informed Consent - Quality of life - Age limits on healthcare
- Euthanasia - Acts of Omission and Commission,
- Successful Aging / Aging Gracefully
- Risk factor management
- Screening for disease in old age, cost benefit of screening procedures
- Health promotion in old age
- Immunization in old age
- Physical Exercise and Cognitive Stimulation activities for Healthy ageing

## Psychosocial geriatrics:

- Psychological issues in old age
- Social changes in old age
- Functional ability and dependence
- Evaluation of functional ability and dependence, Environmental facilitation, avoiding accidents and increasing level of independence to perform daily activities
- Role of family, Issues in caring, concerns related to caregiver
- Family counselling
- Support groups
- Planning for retired life
- Elder abuse and prevention
- Loneliness, Widowhood, Bereavement
- Social Interventions
- Socioeconomic issues in older people, National programme
- Planning for long term care -Home care, Day care, Hospice care

- Types of old age homes, regulations for old age homes in India
- Specific issues for health education in older people, various approaches of health education for elderly

## Preventive geriatrics:

- Preventing Diseases and promoting health in old age - Types of preventive activities - Risk factor management in elderly -screening
- Health Belief Model - General Health practices in elderly
- Exercise in the elderly - Physical and Mental domain - Benefits of Exercise
- Development of Anticipatory Care and its Rationale - methods of Anticipatory Care

- Health promotion and Health Education in the Elderly
- Anti-Aging interventions and ageing gracefully
- Geriatric vaccination

## Rehabilitation geriatrics

- Impairment, Disability and Handicap
- The concepts and History of Rehabilitation and goals of Rehabilitation
- Levels of disability prevention
- Physical, Vocational, Social and Psychosocial rehabilitation
- Rehabilitation approaches, Principles of Rehabilitation - Assessment, goals, priorities and monitoring progress
- Rehabilitation in old age - Special features in relating to aging, multiple pathology, Policies, expectation, carers, acute illness, social and financial support
- Clinical evaluation of rehabilitation - impairment, disability and handicap
- Prevalence of disability, types of disability
- Assistive devices
- Legislative aspects of rehabilitation
- Functional assessment tools and limitations
- Dependence, independence and competence

- Rehabilitation as Team work - Team leadership, therapist, physiotherapy, occupational therapy, social worker, physician and nursing personnel.
- Self care evaluation and management of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) - Self Care Assessment Tools
- Aids and application - Tools for living
- Role of physiotherapy in the elderly
- Contractures and other deleterious effects of immobility
- Pressure Ulcer - factors, prevention and management
- Rehabilitation of Stroke in the elderly
- Rehabilitation of specific diseases - Parkinsonism, Paraplegia, Fracture neck of femur, acute and chronic arthritis, lower limb amputation, low back pain
- Organization and effectiveness of rehabilitation services -Community Services, Geriatric Unit, Day hospital, Day Care Centre, Long Stay Care Institution- role of rehabilitation in the above services

## Advances in Geriatric Medicine:

- Alzheimer's Disease, Parkinsonism, Osteoporosis, Urinary Incontinence, Falls / Prevention of Fractures, Stroke, frailty, anti ageing interventions, Immunology, COPD, heart failure, CKD, CLD, Polypharmacy, Sleep disorders, Novel disease, Novel drugs, Novel device, Novel diagnostic test, Recent management guidelines in Geriatric conditions, Research methodology and Biostatistics.

# TEACHING AND LEARNING METHODS

**Duration: - 3years.**

The aim is to provide the postgraduate student with advanced knowledge and skills to evaluate and plan management of older adults presenting with common medical conditions(communicable and non-communicable diseases), geriatric syndromes (dementia, falls, urinary incontinence, frailty etc).

**1st year**: Geriatric Medicine - 6 months, General Medicine – 4 months, Emergency medicine – 1 month, ICU – 1 month.

**2nd year:** Cardiology - 1 & half months, Echo/Cath lab - 15 days, Neurology - 1 & half months, Nephrology– 1month, Medical Oncology – 1month, Gastroenterology - 15 days, **District Residency programme (DRD)** – 3 months, ICU – 1 month, Psychiatry – 1 month, Pulmonology - 15 days, Physical Medicine & Rehab - 15 days.

**3rd year:** Geriatric Medicine (including long term care, end of life care, day care, community care, Incontinence clinic, Falls clinic, Memory clinic, Vaccination clinic).The training in some of these areas will be done in collaboration with the Department of Community Medicine/Orthopaedics/Urology /Neurology/Psychiatry.

# MONITORING LEARNING PROGRESS

# ASSESSMENT

## CONTINUOUS ASSESSMENT

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

- It may be structured and assessment be done using checklists that assess various aspects. **Model Checklists** are given in the **annexure**.
- The learning outcomes to be assessed should include: (i) Personal Attitudes, (ii) Acquisition of knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

## Personal Attitudes:

- The essential itemsare: Caring attitudes, Initiative, Organisational ability, Potential to cope with stressful situations and undertake responsibility, Trust worthiness 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 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.

## Acquisition of Knowledge:

- It will be problem oriented as well as integrated with other disciplines. The curriculum shall be both hospital and community oriented. Integrated teaching programme with Medicine department, Neurology, Community medicine, Orthopaedics, ENT, Ophthalmology, Dermatology, Physiotherapy, and Psychiatry.
- Postgraduate students will be participating in the teaching and training programme of undergraduate students and interns and logbook entry will be done after the class.
- A postgraduate student would be required to **present one poster presentation, to read one paper at a national/state conference and to present one research paper, which should be published during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination**.
- Participation in workshops, conferences and presentation of papers etc. Will be mandatory. **A minimum of one annual conference and one CME will be a must**.

Teaching methods will include the following:

1. Lecture and demonstration- once a week
2. Case presentation-2 cases per week
3. Small group discussion on communication issues /health education/counseling -one per week
4. Seminars, Journal club-one per week
5. Audit and Mortality meets- once a month
6. CPC - with General medicine department and Pathology department - once month
7. Clinico-microbiological discussion - with Microbiology department -once a month
8. Clinico-radiological discussion with Radiology department - once a month
9. Clinico-Psychiatry department discussion- once in 3 months
10. Case discussions with Ortho department - once in 3 months
11. Case discussion with ENT/Eye departments -once in 6 months
12. Case discussion with Community Medicine - once in 3 months
13. Workshops- Orientation workshop (2 weeks), Geriatric Palliative care certificate course (12 days), Summer course in Clinical and Research ethics(4 days), Psychodrama certificate course- for developing empathy and communication skills (5

days)

14. Simulated Patient Lab-BLS, ACLS ,Emergencies
15. Electronic and Computer Simulators - case based learning
16. Web Based (from educative websites, webinars)

Some aspects of the various activities are summarized below:

- *Journal Review Meeting (Journal Club*): The ability to do literature search, in dept. 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 –2)
- *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 - 3)
- *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 checklist similar to that used forseminar.
- *Medical Audit*: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in the assessment.

## Clinical Skills:

- *Day to Day work:* Skills in outpatient and ward wok should be assessed periodically. The assessment should include the candidate's sincerity and punctuality, analytical ability and communication skills (see Model Checklist –4 / **mini-CEX**)
- *Clinical Meetings:* Candidates should periodically present cases to his peers and faculty members. This should be assessed using a checklist (see Model Checklist - 1)

## Procedural Skills:

- The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by **Direct Observation of Procedural Skills (DOPS).**Particulars are recorded by the student logbook. (Table No. 3)

Procedural skills performed:

- IV line insertion, central line insertion, ABG, Endotracheal intubation, bone marrow biopsy, thoracocentesis, peritoneocentesis, lumbar puncture, ICD insertion, Foley's catheter insertion, point of care ultrasound - which will all be maintained in log book.

Optional Procedural skills:

- Synovial fluid aspiration, intra-articular injection, skin biopsy, nerve biopsy, muscle biopsy etc. - if observed will be recorded in log book.

Procedural skills observed:

- Angiography, 2 D-echocardiography, Endoscopy, Colonoscopy, Fibroscan, Bronchoscopy, Dialysis, Renal biopsy, Plasmapheresis, NCV/ EMG etc. will be recorded in log book.

## 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 - 5).

## Formative assessment

**Quarterly assessment** during the MD training by faculty will be based on:

- Journal based / recent advances learning
- Patient based /Laboratory or Skill based learning (based on day to day performance)
- Procedural skills
- Self-directed learning and teaching

- Departmental and interdepartmental learning activity
- External and Outreach Activities /CMEs
- Logbook - Mini CEX and DOPS methods will be used for formative assessment

**Cumulative of these will be considered for the 50 marks earmarked for the annual assessment**.

**At the end of each year** there will be a theory examination for 100 marks and a clinical examination for 50 marks, internal assessment of departmental / interdepartmental activities, clinical work & procedural skills during the year (all these will be assessed by the logbook) – 50 marks; thus totalling **200 marks**.

**Of the 3 year cumulative marks of 600, 40 percent mark is a must to be eligible to take up final examination (i.e., 240 marks)**.

**Logbook**

- The logbook is a record of the important activities of the candidates during his training. The number of activities attended (annexure: Table 1 of logbook) and the number in which presentations (annexure: Table 2 of logbook) are made are to be recorded. The logbook should periodically be validated by the supervisors.
- Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by thecandidate.Log booksshall be checked and assessed periodically by the faculty members imparting the training. Department will upload activities in Yengage E learning activity platform to encourage e-learning activities.
- Format for the log book for the different activities is given below in the annexure (Model check list - 7).
- Procedure for defaulters: The department shall 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 department committee may recommend that defaulting candidate be withheld from appearing the examination, if she/ he fails to fulfil the requirements in spite of being given adequate chances to set himself or herself right.
- *Records:* Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University orMCI.

## SUMMATIVE ASSESSMENT:

**Thesis**

- Every post graduate student shall carry out work on an assigned research project under the guidance of a recognised Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis. Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the post graduate student to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.
- 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 shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners. (Model check list for dissertation review - 6 annexure).

**1. Theory Examination:**

There shall be four theory papers:

**Paper I:** Basic Sciences as applied to Geriatrics and general Medicine

**Paper II:** General Medicine topics relevant to Geriatric Medicine

**Paper III :** Clinical Geriatrics

**Paper IV:** Recent advances in Geriatrics including recent guidelines &newer drugs

**Each paper** will carry **100 marks** and 10 questions carrying equal marks.

**2. Clinical (300 marks):**

Clinical examination will comprise of 3 cases and 4 OSCE stations with different problems to assess subject specific competencies evaluation. The candidate will be assessed for his/her ability to complete total assessment and management of medical, social, psychological, functional, palliative care problems with stress on multiple pathologies. The communication skills and case sheet writing skill shall also be evaluated.

**Case 1**- Time 60 minutes - Neurology case with multiple geriatric giants such as high risk of fall, urinary complaints, cognitive impairment and or depression with or without polypharmacy

-**120** marks.

**Case 2** – Short Case 1-: Systemic case - Time 30 minutes -**60** marks.

**Case 3** – Short case 2 :Systemic case - Time 30 minutes - **60** marks.

**Case 4**- 4 **OSCE** Stations x 10 marks – Total time 30 minute

4cases OSCE Stations – (1.Multiple pathology, 2.Palliative care, 3.Rehabilitation. 4.Emergency simulation)- **40 Marks**

Dissertation viva – **20 Marks**

**Total - 300 Marks**

**3.Total Viva Voce (100 marks):**

**Objective Structured Practical Evaluation[OSPE]:**10OSPE carrying 5 marks each including X-ray, Ultrasound, CT, MRI, ECG, Biochemical reports, Psychiatric assessment, Retinal assessment via Ophthalmoscope, Audiogram reports, DEXA reports, Diagnostic charts/ Problem charts, Blood gas analysis / Pulmonary function test/Ventilator wave forms.- **50Marks**

**Questions on subject knowledge and advances – 25 Marks X 2stations = 50 Marks**

**Total - 100Marks**

THEORY 400

CLINICAL 300

VIVA VOCE 100

**TOTAL = 800**

**Candidate has to score 50 percent in theory aggregate with paper minimum marks of 40%.Candidate has to pass independently in theory, clinical and Viva voce sections.**

# RECOMMENDED READING:

**Books**

1. Fillit M, Rockwood K, Young J. Brocklehurst's Textbook of Geriatric medicine and gerontology. 8th ed. Philadelphia: Elsevier; 2017.

2. Mache J.Oxford Text Book of Geriatric Medicine.3rd ed.UK: Oxford University Press; 2018.
3. Jameson J, Fauci et al. Harrison's Principles of Internal Medicine.20th ed.Vol.1. The McGraw-Hill Companies; 2018.

4. Jameson J, Fauci et al. Harrison's Principles of Internal Medicine.20th ed.Vol.2.The McGraw-Hill Companies; 2018.

5. Halter J. Hazard's Text Book of Geriatric Medicine.7thed. New York: McGraw Hill; 2017.

6. Sinclair A, Morley J,Vellas B. Pathy'sText Book of Geriatric Medicine. 5th ed. Vol. 1. UK: Wiley Blackwell; 2012.

7. Sinclair A, Morley j, Vellas B. Pathy'sText Bookof Geriatric Medicine. 5th ed. Vol. 2. UK: Wiley Blackwell;2012.

8. Sharma O P (ed), Principles & Practice of Geriatric Medicine, MV Learning,1st ed.;2015

## Journals

1. Journal of Indian Academy of Geriatrics
2. Age and Ageing
3. Journal of American Geriatrics Society
4. Gerontology
5. JNHA (Journal of Nutrition, Health & aging)
6. JAMDA (Journal of the American Medical Directors Association)
7. NEJM (New England Journal of Medicine)
8. Lancet
9. BMJ (British Medical Journal)
10. Journal of Cachexia, Sarcopenia and Muscle.
11. BMC Geriatrics

# ANNEXURE

Blue Printing for MD Geriatric Medicine Exams as per the Curriculum and Questions Paper

## Paper I: Basic Sciences as applied to the Geriatrics

| SL No. | Topic | Weightage | Marks allotted | No of Questions |
|---|---|---|---|---|
| 1 | Normal and abnormal ageing in each organ system | 10% | 10 | 1 |
| 2 | Theories of ageing | 10% | 10 | 1 |
| 3 | Nutrition | 10% | 10 | 1 |
| 4 | Geriatric Pharmacology | 10% | 10 | 1 |
| 5 | Anatomy as applied to geriatric medicine | 10% | 10 | 1 |
| 6 | Physiology | 10 % | 10 | 1 |
| 7 | Microbiology relevant to geriatric Medicine | 10% | 10 | 1 |
| 8 | Biochemistry | 10% | 10 | 1 |
| 9 | Pathology /Hematology | 10% | 10 | 1 |
| 10 | Epidemiology of ageing, Ethical issues and legal issues in Geriatric care /Toxicology | 10% | 10 | 1 |

## Paper II-General Medicine including PsychoGeriatics

| SL No. | Topic | Weightage | Marks allotted | No of Questions |
|---|---|---|---|---|
| 1 | Syndromic approach to common symptoms in | 10% | 10 | 1 |

| | | | | |
|---|---|---|---|---|
| | medicine | | | |
| 2 | Infectious diseases | 10% | 10 | 1 |
| 3 | Gastrointestinal disorders including liver and pancreatic disorders | 10% | 10 | 1 |
| 4 | Respiratory disorders | 10% | 10 | 1 |
| 5 | Cardiovascular diseases | 10% | 10 | 1 |
| 6 | Endocrinology including diabetes | 10 % | 10 | 1 |
| 7 | Genitourinary Disorders and nephrology including fluid and eleltrolyte disorders | 10% | 10 | 1 |
| 8 | CNS and Neuropsychiatric disorders | 10% | 10 | 1 |
| 9 | Rheumatological disorders | 10% | 10 | 1 |
| 10 | Haematological disorders | 10% | 10 | 1 |

## Paper III Core Geriatrics

| SL No | Topic | weightage | Marks | No of Questions |
|---|---|---|---|---|
| 1 | Investigations in elderly including imaging and systemic investigations | 10% | 10 | 1 |
| 2 | ENT problems and Vision problems in elderly | 10% | 10 | 1 |
| 3 | Dermatological problems in elderly | 10% | 10 | 1 |
| 4 | Cancer in Elderly | 10% | 10 | 1 |
| 5 | Mental health of the elderly including insomnia, anxiety depression and dementias | 10% | 10 | 1 |
| 6 | Falls ,fractures Gait and balance disorders and osteoporosis | 10% | 10 | 1 |

| | | | | |
|---|---|---|---|---|
| | ,degenerative joint diseases | | | |
| 7 | Frailty /Sarcopenia/functionality | 10% | 10 | 1 |
| 8 | Palliative care symptom control such as Pain, dyspnoea, constipation in elderly | 10% | 10 | 1 |
| 9 | End stage diseases in Geriatric practice, supportive care , palliative care and end of life care | 10% | 10 | 1 |
| 10 | Psychosocial ,spiritual and ,ethical issues and communication issues in palliative care | 10% | 10 | 1 |

## Paper IV: Recent advances, social geriatrics, rehabilitation

| SL No | Topic | Weightage | Marks | No of Questions |
|---|---|---|---|---|
| 1 | Social Geriatrics | 10% | 10 | 1 |
| 2 | Psychosocial Geriatrics | 10% | 10 | 1 |
| 3 | Preventive Geriatrics | 10% | 10 | 1 |
| 4 | Rehabilitative Geriatrics | 10% | 10 | 1 |
| 5 | Advances in Geriatrics Newer Guidelines | 20% | 20 | 2 |
| 6. | Recent advances –Newer drugs/Devices | 10% | 10 | 1 |
| 7. | Novel Diagnostic test | 10% | 10 | 1 |
| 8 | Novel surgical technique for geriatric problems | 10% | 10 | 1 |
| 9. | Research methodology and Biostatistics | 10 | 10 | 1 |

Model Question Paper

Paper I

**Basic Sciences and Basic Geriatrics**

**Marks-100**

Answer all the 10 Questions Draw neat diagram wherever necessary

1. Describe changes in the ageing brain and describe clinical features of normal brain ageing (5 +5 Marks)

2. Beer's criteria (10 Marks)

3. Describe Physiological stages of sleep and write a note on restless leg syndrome (10 Marks)

4. Refeeding syndrome (10 Marks)

5. Antibiotic resistance (10 Marks)

6.. Homeostenosis in frailiy (10Marks)

7. Pulmonary function tests (10 Marks)

8. Coronary angiogram (10 Marks)

9. Value of Pleural fluid analysis in Pleural effusion (10 Marks)

10. Creatinine clearance in Elderly (10 Marks)

Paper - II

## General Medicine and Psycho Geriatrics

**100 - Marks**

1. Describe aetiology , clinical features and management of heart failure with preserved ejection fraction ( 10 Marks)

2. Describe clinical features and management of interstitial lung disease (10 Marks)

3. Describe clinical spectrum of H. Pylori infection in elderly and describe management (10 Marks)

4. Describe principles of management of diabetics in elderly (10 Marks )

5. Describe urinary tract infection in elderly and outline management (10 Marks)

6. Describe GB Syndrome and its outcome in elderly (10 Marks)

7. Describe neurological features of Sjogren's syndrome ( 10 marks)

8. Describe investigation and management of multiple myeloma (10 Marks)

9. Long COVID Syndrome (10 Marks)

10. Describe aetiology, pathology and key clinical features of dementia / Major neurocognitive disorder in elderly ( 10 Marks)

Paper III

## Geriatric Medicine including Geriatric Palliative care

**100-Marks**

1. Discuss approach to a case of falls (10 Marks)

2. Fraility Scales ( 10 Marks )

3. Approach to an elderly with vertigo (10 Marks )

4. Septic shock (10 Marks )

5. Describe diagnostic Criteria and clinical features of Polymyalagia rheumatica ( 10 marks )

6. Stress incontinence in elderly females ( 10 Marks )

7. Describe various modalities of managing severe neuropathe pain (10 Marks )

8. Describe principles of end of life care ( 10 Marks)

9. Approach to pancytopenia in elderly (10 marks )

10. Describe step in breaking bad news and describe possible reactions to bad news (10 Marks )

## Paper IV

## Social and Preventive Geriatrics, Rehabilitation and advance in geriatrics

**10 - Marks**

1. Describe schedule of Vaccination for an elderly aged 65 years (10 Marks )

2.Describe types of elder abuse & suggest possible remedies ( 10 Marks )

3.Discuss risk factors for dementia in the elderly with reference to life course approach

(10 Marks)

4. Discuss factors which interfere with the rehabilitation in the elderly (10 Marks)

5. Describe 3 functional assessment tools used in elderly care and discuss their limitations

( 10 Marks)

6. Describe assistive devises available for elderly in India(10 Marks)

7. Recent advances in treatment of Alzheimer's disease (10 Marks)

8. Describe guidelines for acute ischemic stroke management (10 Marks)

9.Metabolic dysfunction associated steatohepatits in eldery (10 Marks)

10.Droxidopa (10 marks)

# MODEL CHECK LIST FOR VARIOUS PRESENTATIONS

## 1) MODEL CHECK LISTEVALUATION FORM FOR - CLINICAL PRESENTATION

Name of the student:

Name of the faculty / Observer:

Date:

# 2) MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the student:

Name of the faculty/ Moderator:

| Sl No. | Items of observation during Presentation | Poor 0 | Below average 1 | Average 2 | Good 3 | Very good 4 |
|---|---|---|---|---|---|---|
| 1 | Completeness of history | | | | | |
| 2 | Whether all relevant points elicited | | | | | |
| 3 | Clarity of presentation | | | | | |
| 4 | Logical order | | | | | |
| 5 | Mention all positive and negative points of importance | | | | | |
| 6 | Accuracy of general physical Examinations | | | | | |
| 7 | Whether all physical signs elicited Correctly | | | | | |
| 8 | Whether any major signs missed or misinterpreted | | | | | |
| 9 | Whether it follows logically from history and findings | | | | | |
| 10 | Investigations required<br>• Complete test<br>• Relevant order<br>• Interpretation of investigations | | | | | |
| 11 | Ability to react to questioning whether it follows logically from history and findings | | | | | |
| 12 | Ability to defend diagnosis | | | | | |
| 13 | Ability to justify differential diagnosis | | | | | |
| 14 | Others | | | | | |
| | **Grand Total** | | | | | |

Date:

| Sl No. | Items of observation during Presentation | Poor<br>0 | Below average<br>1 | Average<br>2 | Good<br>3 | Very good<br>4 |
|---|---|---|---|---|---|---|
| 1 | Article chosen was appropriate | | | | | |
| 2 | Extent of understanding of scope & Objectives of the paper of the candidate | | | | | |
| 3 | Whether cross reference has 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** | | | | | |

# 3) MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the student:

Name of the faculty/ Moderator:

Date:

| Sl No. | Items of observation during Presentation | Poor 0 | Below average 1 | Average 2 | Good 3 | Very good 4 |
|---|---|---|---|---|---|---|
| 1 | Whether other relevant publications Consulted | | | | | |
| 2 | Whether cross references have been consulted | | | | | |
| 3 | Completeness of the Preparation | | | | | |
| 4 | Clarity of Presentation | | | | | |
| 5 | Understanding the subject | | | | | |
| 6 | Ability to answer the questions | | | | | |
| 7 | Time Scheduling | | | | | |
| 8 | Appropriate use of Audio – Visual Aids | | | | | |
| 9 | Overall Performance | | | | | |
| 10 | Any other Observation | | | | | |
| | **Total Score** | | | | | |

# 4) MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK IN WARD/OPD

## Mini-CEX:

Based on the Advanced Training Module of Royal Australasian College of Physicians.

*mini-CEX Advanced training Module RACP*

Or alternatively, the following table may be used. Faculty are encouraged to use **Mini-CEX.**

Name of the student: Date:

Name of the faculty/Moderator:

| Sl No. | Items of observation during Presentation | Poor 0 | Below average 1 | Average 2 | Good 3 | Very good 4 |
|---|---|---|---|---|---|---|
| 1 | Regularity of attendance | | | | | |
| 2 | Punctuality | | | | | |
| 3 | Interaction with Colleagues And Supporting 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 Patient's relatives for Blood donation or Postmortem andCase follow up. | | | | | |
| 10 | **Overall quality of clinical work** | | | | | |
| | **Total Score** | | | | | |

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# Mini-Clinical Evaluation Exercise (mini-CEX) Rating Form

Advanced Training

Trainee's name : ☐☐☐☐ Date of assessment : ☐☐/☐☐/☐☐

Advanced Training year : 1 2 3 4+ Case number for that year : 1 2 3 4
(Full time equivalent)

Assessor's name : Assessor's position :
☐ ☐ ☐ ☐

Assessor's email : Hospital/Location :

Setting : ☐ In-patient ☐ Out-patient ☐ Emergency ☐ Other (please specify)

Patient problem/Dx(s) :

Specialty :

Patient age : Patient gender : Male Female Case complexity : Low
Medium High

If a trainee receives a rating which is unsatisfactory, the assessor must complete this section for the form to be submitted.

| | Unsatisfactory | | | Satisfactory | | | Superior observed | | | Not observed |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Medical interviewing skills | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | n/o |
| 2. Physical examination skills | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | n/o |
| 3. Professional qualities/communication | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | n/o |
| 4. Counselling skills | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | n/o |
| 5. Clinical judgement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | n/o |
| 6. Organisation/efficiency | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | n/o |
| **Overall clinical performance** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |

Time taken for observation : min

Time taken for feedback : min

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Assessor satisfaction using mini-CEX | LOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | HIGH |
| Trainee satisfaction using mini-CEX | LOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | HIGH |

*Data from formative assessments is collated for the purpose of evaluation. Individual, identifiable data will not be presented in any published reporting.*

# 5) MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of the student:

Name of the faculty/Moderator:

Date:

| Sl No. | Items of observation during Presentation | Strong point 1 2 3 | Weak point -1 -2 -3 |
|---|---|---|---|
| 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 (clear, monotonous, etc. specify) | | |
| 7 | Attempts audience participation | | |
| 8 | Summary of the main points at the end | | |
| 9 | Ask questions | | |
| 10 | Answer questions asked by the audience | | |
| 11 | Rapport of the speaker with his audience | | |
| 12 | Effectiveness of the talk | | |
| 13 | Uses of AV aids appropriately | | |
| | **Total Score** | | |

# 6) MODEL CHECK LIST FOR - DISSERTATION PRESENTATION

Name:

Faculty/Moderator:

Date:

**Proforma Presentation:**

| Sl No. | Items of observation during Presentation | Poor 0 | Below average 1 | Average 2 | Good 3 | Very good 4 |
|---|---|---|---|---|---|---|
| 1 | Interest shown in selecting topic | | | | | |
| 2 | Appropriate review of literature | | | | | |
| 3 | Discussion with Guide and faculty | | | | | |
| 4 | Quality of protocol | | | | | |
| 5 | **Preparation of Proforma** | | | | | |
| | **Total Score** | | | | | |

**Final Presentation:**

| Sl No. | Items of observation during Presentation | 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 | Department Presentations findings | | | | | |
| 5 | **Quality of final output** | | | | | |
| 6 | Others | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Total Score** | | | | | |

# 7) LOG BOOK

## Table 1: Academic activities attended

Name: Admission year:

College:

| **Date** | **Type of activity**<br>Specify -Clinical presentation, Seminar, Journal club Presentation, Interdepartmental activities, Workshops, Training, Web based programmes, Audit and mortality meets, UG teaching. | **Particulars** |
|---|---|---|
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# LOG BOOK

## Table 2: Academic Presentations made by the students

Name: Admission year:

College:

| Date | Topic | Type of activity<br>Specify - Seminar, Journal club, Presentation, Interdepartmental activities, UG teaching. |
|---|---|---|
| | | |
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# LOG BOOK

## Table 3: Diagnostic and Operative procedures performed:

**Direct Observation of Procedural Skills (DOPS) will be used to grade the student.**

Name: Admission year:

College:

| Date | Name | I D No. | Procedure | Marks awarded out of 10 |
|---|---|---|---|---|
| | | | | |
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# 8)OVERALL ASSESSMENT SHEET

## POST GRADUATE STUDENTS
## APPRAISAL FORM

**Name of the Department: Geriatric Medicine**

**Name of the PG Student :**

**Period of Training :**

**FROM……TO……**

| Sr. No. | PARTICULARS | Not Satisfactory | Satisfactory | More Than Satisfactory | Remarks |
|---|---|---|---|---|---|
| | | 1 2 3 | 4 5 6 | 7 8 9 | |
| 1. | Journal based / recent advances learning | | | | |
| 2. | Patient based /Laboratory or Skill based learning | | | | |
| 3. | Self directed learning and teaching | | | | |
| 4. | Departmental and interdepartmental learning activity | | | | |
| 5. | External and Outreach Activities / CMEs | | | | |
| 6. | Thesis / Research work | | | | |
| 7. | Log Book Maintenance | | | | |

**Note: Use separate sheet for each year.**

**Publications: Yes/No**

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**Remarks*** _____

_____

_____

_____

***REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.**

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