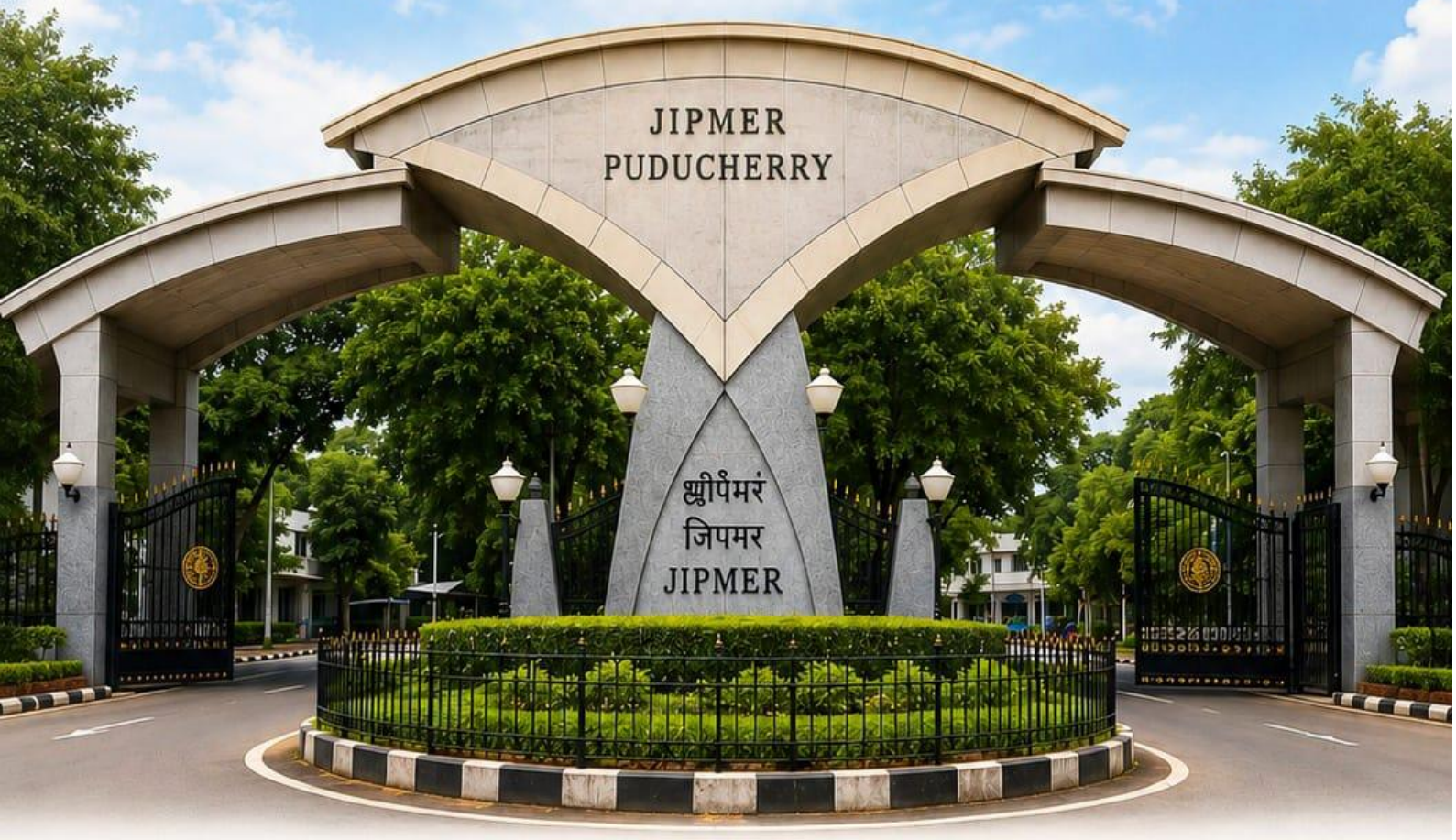
CURRICULUM

POSTGRADUATE

MD Geriatric Medicine

From July 2026 session



JAWAHARLAL INSTITUTE OF POSTGRADUATE MEDICAL EDUCATION AND RESEARCH (JIPMER),
PUDUCHERRY – 605 006.

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This curriculum was approved at the 19th meeting of the Standing Academic Committee held on 28th January 2026 and ratified at the 22nd meeting of the Governing Body and will be applicable for students joining MD Geriatric Medicine from the July 2026 session.

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GOAL OF THE COURSE

- To create a new generation of competent and skillful geriatricians who can provide comprehensive and compassionate care to older adults, backed by evidence-based medicine.
- To carry out research in the field of geriatrics and gerontology and introduce innovation through their lifelong commitment and learning
- To train them as future leaders who will in turn teach the students at undergraduate and postgraduate level, nursing and paramedical staffs, patients, family and society, about the health and management of older adults
- To impart effective communication skills to disseminate their learning to patients, public, and peers.

TERMINOLOGY

Key-capabilities

- They refer to the practices carried out by the specialists as part of their professional services.
- They represent the services required from them, by patients, students, other medical/paramedical staff or the society in general.
- Thus, they refer to the specific tasks that the postgraduate will be expected to do after they completes the course.
- For the purpose of training, the tasks are broken down into units that have distinct cognitive concepts, unless they are predominantly procedural, or attitude based.

Core ideas in practice of Key-capabilities

They refer to the ideas that underly the practice of the specialists. They include ideas and concepts about structure and functioning of organs and organ systems in health and diseases, classification of diseases, equipment, tests, drugs etc.

COURSE CONTENT:

1. Key-capabilities in the practice of Geriatric Medicine (outline below, details in Annexure 1 (Part A))

2. Core ideas in the practice of key-capabilities (outline below, details in Annexure 1 (Part B))

3. Peripheral postings, details in Annexure 1(Part C) and under 'Educational strategy'

(Please refer Annexure 1 for details)

OUTLINE

KEY CAPABILITIES	
1.	Diagnosis and Management of common medical symptomatology in older patients attending OPD
2.	Diagnosis and Management of Geriatric syndromes in older patients
3.	Diagnosis and management of older patients admitted with systemic diseases
4.	Diagnosis and management of acute medical emergencies in older patients
5.	Liaison services
6.	Care models
7.	Pain and palliative care, End-of-life care, Ethical issues
8.	Gerontology
9.	Clinical Data management and Research
10.	Social activities
11.	Adherence to GCP Guidelines (Good Clinical Practice guidelines)
12.	Leadership and Teamwork capabilities
13.	Attitude, Relationships and communication skills
Learning objectives for key-capabilities in practice of Geriatric Medicine	

CORE IDEAS IN THE PRACTICE OF KEY-CAPABILITIES	
1.	Biology of Ageing
2.	Geriatric Syndromes
3.	Comprehensive geriatric assessment
4.	Disease management
5.	Emergency management
6.	Rational Drug therapy
7.	Rehabilitation
8.	Liaison Services
9.	Care models
10.	Pain and palliative care
11.	Ethical and legal issues, Advance directives, Communication
12.	Preventive care, Health promotion, and Healthy Ageing
13.	Recent advances
14.	Medical Statistics
Learning objectives	

LEARNING RESOURCES

Suggested Books/ Online Resources

Please refer to latest edition when available

S. No	Name of Book	Author	Edition	Publisher
1.	Hazzard's Geriatric Medicine and Gerontology	Jeffrey B. Halter, Joseph G. Outlander, Stephanie Studenski, Kevin P. High, Sanjay Asthana, Mark A. Supiano, Christine S. Ritchie, Kenneth Schmader	8th edition	McGraw Hill
2.	Brocklehurst's Textbook of Geriatric Medicine and Gerontology	Kenneth Rockwood & Ruth E. Hubbard & Andrew P. Clegg	8th / 9th Edition	Elsevier
3.	Oxford Textbook of Geriatric Medicine	Jean-Pierre Michel, B. Lynn Beattie, Finbarr C. Martin, Jeremy Walston	3rd Edition	Oxford University Press
4.	Pathy's Principles and Practice of Geriatric Medicine	Alan J. Sinclair, John E. Morley, Bruno Vellas, Matteo Cesari, Medha Munshi	6th Edition	Wiley
5.	Geriatric Emergency Medicine	Christian Nickel, Abdelouahab Bellou, Simon Conroy	1st Edition	Springer
6.	Orthogeriatrics	Paolo Falaschi, David Marsh	2nd Edition	Springer
7.	Handbook of Rehabilitation in Older Adults	Robert J. Gatchel, Izabela Z. Schults, Christopher T. Ray	1st Edition	Springer
8.	Oxford Textbook of Cognitive Neurology and Dementia	Masud Husain, Jonathan M. Schott	1st Edition	Springer
9.	Geriatric Oncology	Martine Extermann	1st Edition	Springer
10.	Current Diagnosis & Treatment Geriatrics	Louise C. Walter, Anna Chang, Pei Chen, G. Michael Harper, Josette Rivera, Rebecca Conant, Daphne Lo, Michi Yukawa	3rd Edition	McGraw Hill
11.	Essentials of Clinical Geriatrics	Barbara Resnick, Robert L. Kane, Joseph G. Ouslander, Michael L. Malone	8th Edition	McGraw Hill
12.	Harrison's Principles of Internal Medicine	Joseph Loscalzo, Anthony Fauci, Dennis Kasper, Stephen Hauser, Dan Longo, J. Larry Jameson	21st Edition	McGraw Hill
13.	Davidson's Principles and Practice of Medicine	Ian Penman, Stuart H. Ralston, Mark Strachan, Richard Hobson	24th Edition	Elsevier

Miscellaneous				
1.	Medical Statistics at a Glance	Aviva Petrie & Caroline Sabin	4th, 2019	Wiley Blackwell
Online resources				
	UpToDate MoCAcognition (mocacognition.com) Eprognosis (eprognosis.ucsf.edu) Harvard eFrailty (efrailty.hsl.harvard.edu) GeriatricsCareOnline – American Geriatric Society (geriatricscareonline.org) National Institute of Aging (nia.nih.gov)			

Suggested Journals

S. No	Abbreviation Browse Journal in Medline	Journal Title	Journal Home Page	ISSN	Publisher
1.	J. Am. Geriatr. Soc.	Journal of the American Geriatrics Society	agsjournals.onlinelibrary.wiley.com	0002-8614	Wiley-Blackwell
2.	Arch. Gerontol. Geriatr.	Archives of Gerontology and Geriatrics	www.sciencedirect.com/journal/archives-of-gerontology-and-geriatrics	0167-4943	Elsevier
3.	BMC Geriatr.	BMC Geriatrics	bmcgeriatr.biomedcentral.com	1471-2318	BioMed Central
4.	Geriatr. Gerontol. Int.	Geriatrics & Gerontology International	onlinelibrary.wiley.com/journal/14470594	1444-1586	Wiley-Blackwell
5.	J. Gerontol. A Biol. Sci. Med. Sci.	The Journals of Gerontology: Series A, Biological Sciences and Medical Sciences	academic.oup.com/biomedgerontology	1079-5006	Oxford University Press
6.	Geriatr. Nurs.	Geriatric Nursing	www.sciencedirect.com/journal/geriatric-nursing	0197-4572	Elsevier
7.	J. Geriatr. Med. Gerontol.	Journal of Geriatric Medicine and Gerontology	clinmedjournals.org/Journal-of-Geriatric-Medicine-and-Gerontology.php	2469-5858	ClinMed International Library
8.	Int. J. Gerontol.	International Journal of	www.sciencedirect.c	1873-9598	Elsevier

		Gerontology	om/journal/international-journal-of-gerontology		
9.	J. Gerontol. Geriatr.	Journal of Gerontology and Geriatrics	www.jgerontology-geriatrics.com	2499-6564	Pacini Editore
10.	Asian J. Gerontol. Geriatr.	Asian Journal of Gerontology and Geriatrics	www.ajgg.org	1819-1576	Hong Kong Geriatrics Society and Hong Kong Association of Gerontology
11.	Gerontol. Geriatr. Med.	Gerontology and Geriatric Medicine	journals.sagepub.com/home/ggm	2333-7214	SAGE Publications
12.	Australas. J. Ageing	Australasian Journal on Ageing	onlinelibrary.wiley.com/journal/17416612	1440-6381	Wiley-Blackwell
13.	Ann. Geriatr. Med. Res.	Annals of Geriatric Medicine and Research	www.e-agmr.org	2508-4798	Korean Geriatrics Society
14.	Eur. Geriatr. Med.	European Geriatric Medicine	www.springer.com/journal/41999	1878-7649	Springer
15.	J. Geriatr. Oncol.	Journal of Geriatric Oncology	www.sciencedirect.com/journal/journal-of-geriatric-oncology	1879-4068	Elsevier
16.	Gerontology	Gerontology	www.karger.com/Journal/Home/223827	0304-324X	Karger Publishers
17.	J. Geriatr. Psychiatry Neurol.	Journal of Geriatric Psychiatry and Neurology	journals.sagepub.com/home/jgp	0891-9887	SAGE Publications
18.	Maturitas	Maturitas	www.sciencedirect.com/journal/maturitas	0378-5122	Elsevier
19.	J. Aging Stud.	Journal of Aging Studies	www.sciencedirect.com/journal/journal-of-aging-studies	0890-4065	Elsevier
20.	Geriatr. Gerontol. Int.	Geriatrics	www.mdpi.com/journal/geriatrics	2308-3417	MDPI
21.	J. Gerontol. Nurs.	Journal of Gerontological Nursing	www.healio.com/journals/jgn	0098-9134	SLACK Incorporated
22.	Aging Clin. Exp. Res.	Aging Clinical and Experimental Research	www.springer.com/journal/40520	1594-0667	Springer
23.	Clin. Geriatr. Med.	Clinics in Geriatric Medicine	www.geriatric.theclinics.com	0749-0690	Elsevier
24.	J. Nutr. Health Aging	The Journal of Nutrition, Health & Aging	www.springer.com/journal/12603	1279-7707	Springer

25.	Geriatr. Orthop. Surg. Rehabil.	Geriatric Orthopaedic Surgery & Rehabilitation	journals.sagepub.com/home/gos	2151-4585	SAGE Publications
26.	Rev. Esp. Geriatr. Gerontol.	Revista Española de Geriatría y Gerontología	www.elsevier.es/es-revista-revista-espanola-geriatria-gerontologia-124	0211-139X	Elsevier
27.	J. Aging Health	Journal of Aging and Health	journals.sagepub.com/home/jah	0898-2643	SAGE Publications

EDUCATIONAL STRATEGY

Academic Discussion

Academic Activity	Day	Timing
Presentations		
Interesting cases	Once a month	3.30 - 4.30 PM
Intradepartmental Lectures by Consultants / Senior residents	Once a month	3.30 - 4.30 PM
Research Progress / Research Methodology	Once a month	3.30 - 4.30 PM
Multidisciplinary team meet	Once a week	2.30 - 3.30 PM
Weekly audit / Mortality meet	Tuesday	3.30 - 4.30 PM
Journal Club	Thursday	3.30 - 4.30 PM
Seminar	Friday	3.30 - 4.30 PM
Case Discussions		
Bed-side discussion	Every day -ward round	8.30-10.00 AM
Case discussion	Wednesday	3.00-4.30 PM
Others		
Interdepartmental lectures by Consultants	Once every 3 months	3.00 - 4.30 PM
Foundation classes for first year residents taken by Senior residents / Senior PGs	Saturday (first 3 months of 1st semester)	12.00 - 01.00PM

Clinical Activity

First Postgraduate Year (PGY1)	Second Postgraduate Year (PGY2)	Third Postgraduate Year (PGY3)
1. Wards 2. OPD 3. Special clinic 4. Sarcopenia lab (on rotation) 5. Ward emergency duty (as per duty roster) 6. 2 months peripheral postings	1. Wards 2. OPD 3. Special clinic 4. Ward emergency duty (as per duty roster) 5. 6 months peripheral postings	1. OPD 2. Special clinic 3. Wards 4. Gait lab (on rotation) 5. Outreach clinic / Telemedicine (on rotation) 6. 2 months peripheral postings

Posting within department

The postgraduate residents will be posted in different workplaces of the department on rotation at frequent intervals through the course. He/she will achieve the objectives of the posting in all these workplaces.

Peripheral posting

The postgraduate residents will be posted in different departments of the hospital/institute during their course period. Total of 10-month rotation in essential/speciality departments is planned to get first hand exposure to system specific illness and their management in older adults. The resident will be assessed for their knowledge, skills and performance in the department of peripheral posting. Attendance and feedback from these postings will be sent by respective departments to the Dept of Geriatric Medicine.

Department	Basic Objectives	Duration
2nd Semester – 2 months Peripheral posting		
Emergency Medicine (EMSD)	To learn the management of older adults attending Emergency department	1 month
Medicine	To learn the basics of Medicine and management of older adults with acute issues. Though they will have exposure in Geriatric medicine ward postings, rotation in Dept of Medicine will help them to learn various psychomotor skills and clinical approach to management of various spectrum of diseases which may be missed due to the referral/admission pattern.	1 month
3rd Semester – 3 months Peripheral posting		
ICU (in MICU / ICU block)	To learn the critical care management of older adults	1 month
Emergency Medicine (EMSD)	To learn the management of older adults attending Emergency department	1 month
Cardiology	To learn about cardiac illness in older adults, assessment, and their management	1 month
4th Semester – 3 months Peripheral posting		
Neurology	To learn about neurological illness in older adults, assessment, and their management	1 month
Nephrology	To learn about kidney diseases in older adults, assessment, and their management	15 days
Physical Medicine and Rehabilitation (PMR)	To learn about orthopaedic and physical impairments in older adults, assessment, and rehabilitation	15 days
Medical Gastroenterology	To learn about gastrointestinal illness in older adults, assessment, and their management	15 days
Medical Oncology	To learn about cancers in older adults, assessment, and their management	15 days
5th Semester – 2 months Peripheral posting		
Psychiatry	To learn about psychiatric diseases in older adults, assessment, and their management	15 days
Pulmonary Medicine	To learn about respiratory diseases in older adults, assessment, and their management	15 days
Clinical Immunology	To learn about immunological illness in older adults, assessment, and their management	15 days
Endocrinology	To learn about hormonal and related illness in older adults, assessment, and their management	15 days

(Peripheral rotation will be assessed and modified as per students' collective feedback)

Dissertation

- A research project should be undertaken and dissertation must be submitted as per Postgraduate Research Monitoring Committee (PGRMC) guidelines of JIPMER.
- Two hard copies of the dissertation, prepared from the research project, should be submitted to the Dean (Academics) JIPMER, at two and half years of the course to become eligible to appear for the final examination at the end of the course, as per the guidelines of JIPMER.
- Six monthly interim presentations of the dissertations will be done to monitor the progress of the research work and take corrective measures when faced with difficulties.
- **Please refer to Postgraduate Dissertation Regulations and Postgraduate Examination Regulations document for further details**

WORKPLACE OBSERVATION

Logbook

(Please refer Annexure 2 for sample forms)

1. A consolidated record of the number of cases, observed, done independently and with assistance, of each procedure type is entered as per the format in **Annexure 2.** Each entry is made with date and is to be certified by faculty.
2. Detailed work-up of cases selected every month from posting in different workplaces (2 cases with different clinical diagnoses) will be maintained by the resident and entered in the logbook.

3. Record of academic activities (at department, institute or outside institute level) to be entered in the logbook are as following

   a) Presentation in departmental seminars
   b) Presentations in journal clubs presented (with Title, Journal & Article reference)
   c) Conferences attended – National/International
   d) Papers presented at conferences with title, name of the conference, date of presentation (with abstract book)
   e) Papers published in journal (with article reference)
   f) Peripheral postings: Feedback forms/score sheet filled by faculties in other departments during the peripheral posting

4. Record of co-scholastic activities, if any

Workplace observation scheme

(Please refer Annexure 3 for sample forms)

- The day-to-day activities in practice and learning by the resident will be observed and recorded in the "workplace observation form", at pre-decided time instances.
- Assessment of logbook is done at the same time instances, and entry made in the 'workplace observation form' by the faculty.
- Feedback, as part of formative assessment is given to residents, by faculty, during these time instances.

ASSESSMENT

Marks

Exam	Marks	Description
Theory exit examination	400 marks	This is the written exam at the end of the course. Four theory examination papers as given in the curriculum document of the course.
Practical exit exam	400 marks	This is the practical examination at the end of the course. The detailed scheme is given in the curriculum document of the course.
Internal Assessment	Internal assessment Theory: 50 marks	Two exams should be conducted - one at the end of first year and the other at the end of second year. Portions for the examination and pattern of the examination must be notified to the students at least one month in advance. The pattern of the internal assessment test will be similar to one paper of the theory exit examination. Two faculty members will evaluate the paper of each candidate in a blinded manner and the average of the 2 scores will be taken as the final score for the internal assessment. If a resident misses one of the tests due to medical reasons (medical certificate from a faculty member of the treating department and duly forwarded by the HoD to the Dean (Academic)), he/she can be permitted to appear in the test that is held for the next batch 6 months later. This can be permitted only once in the course period. If a resident does not attend an internal assessment test, or if he/she fails to attend the rescheduled test due to medical reasons, the score will be considered as 0 for the test. No retests or re-evaluation will be permitted under any circumstances. The internal assessment marks should be communicated to the students within two months of conducting the exams. Internal assessment test marks will be added to the final aggregate to the tune of 100 marks (theory and practical). There is no cut off of internal assessment test scores for determining eligibility to appear in the exit examination or to decide pass/fail solely based on the internal assessment test scores. However, when a student secures less than 50%

		marks in the internal assessment or when any concern is formally raised by the student with the Dean office, a review board with at least 3 faculty members should be constituted to review the student's performance with the student, recommend appropriate remedial measures, document the remedial plan, and submit a signed copy of the document to the Dean's Office. Additional periodic assessments can be held as part of formative assessment. Scores of these tests will not be considered for internal assessment and will not be considered for replacing scores of any of the internal assessment tests. Information to be provided to the Dean Office, before the final examination. 1. Dates of internal assessment examinations conducted 2. Names of faculty members involved in assessment against each date 3. Marks obtained by students in theory, practical and workplace-based observation in each exam session 4. Internal assessment marks for each student for Theory, Practical and Workplace based assessment. An average of the two theory and practical tests will be used to calculate scores for 50 and 25 marks respectively. Cumulative workplace-based assessment scores will be determined for 25 marks. 5. Copy of review documentations for periods of low performance of a student, if any, with remedial measures suggested by the departmental committee.
Internal Assessment (Practical and Workplace-based assessment)	Internal assessment Practical: 25 marks Internal assessment Workplace-based	For practical examinations, all members of the faculty of the department, from Assistant Professor to the senior-most faculty, shall participate in internal assessment on a rotating basis. The assessment shall be planned such that multiple faculty members are engaged for each student and different faculty members are engaged for the two assessments, wherever feasible. The pattern prescribed in the curriculum document shall be followed for practical assessments and the score shall be adjusted for 25 marks. Workplace-based assessment marks are given based on practice of the profession and affective domain attributes in the workplace and in the

	assessment: 25 marks	learning environment. Workplace observation proforma should be provided to students at the time of joining the department. The method of workplace observation should be explained to the students at the beginning of the course.
Dissertation	100 marks	Dissertation marks will be calculated by the average of the scores provided by 2 external examiners. Approval of the dissertation with more than 50% scores awarded by the external examiners will be one of the eligibility criteria for appearing for the exit examination of the discipline.
Total	1000 marks	**Criteria for PASS:** 1. (a) A candidate will need to pass the final Theory Exit Exam and Practical Exit Exam independently. (b) A minimum of 50% marks in 'Theory Exit exam' (a minimum of 40% in each of the four papers) and 50% in 'Practical Exit exam' separately shall be mandatory 2. A candidate should also score 50% or above in the final aggregate marks (500 out of 1000) to pass in the degree course. If a student secures a pass score in theory and practical examination but fails in the aggregate score, he/she can re-appear in the exit examination of the subsequent session. There is no provision to improve internal assessment or dissertation scores.
Please refer to Postgraduate Examination Regulations document for further details		

Theory Exit Exam

Written exam is conducted in the following four papers,

Paper I: Basic Sciences related to older adults and Gerontology:

Basic Sciences:

- Physiological changes with ageing, structural changes with ageing, biochemical changes with ageing, microbiology and pathology related to older adults.
- Pharmacokinetics in the elderly**,** Pharmacodynamics**,** Drug Selection and Dosage, Drug Interactions, Adverse Drug Reactions, Drug Compliance, Polypharmacy, Drug Misuse/Drug abuse
- Anti-Ageing research and senolytics
- Basic research methodology.

Gerontology:

- Demography, World Trends**,** Trends in India and Developing countries**,** The Aged and Society - Past and Present**,** The evolution of Geriatric Medicine**;**
- Biology of human ageing, Normal and abnormal aging**,** 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.

Paper II: Clinical Geriatrics and psycho-geriatrics:

- **Clinical Geriatrics:**
- **Symptom analysis and approach:** Headache, Chest pain, Chills and Fever, Lassitude and Asthenia, Cough, Nausea and Vomiting, Dysphagia, Ascites, Weakness, Tremor, Dizziness, Vertigo, Disorders of Sensation, Seizures**;**
- **Immunological Factors in Disease:** Components of immune system**,** Mechanism of the immune response**,** Immune deficiency and lympho-proliferative disorders**,** Types of immune reaction and their relation to disease**,** Suppression of immune reactions and its effects**;**
- **Infection and Diseases:** Nature of microorganisms**,** Epidemiology and spread of infections**,** Immunity and Immunosenescence**,** Diagnosis and management of infections**,** Pyrexia of unknown origin**;**
- **Chemotherapy of Infections:** Antibiotics and other antibacterial agents**,** Anti-virals**,** Anti-fungals**,** Anti-retroviral therapy**;**
- **Disturbances in Electrolyte and Water Metabolism:** Hypernatremia and hyponatremia**,** Hyperkalemia and hypokalemia**,** Calcium-phosphate and magnesium metabolism**,** Disturbances in H^+ ion concentration**;**
- **Diseases of the Cardiovascular System:** Cardiac Arrhythmias**,** Cardiac failure**,** Valvular Heart Disease**,** Ischemic Heart Disease, Pericardial diseases, Cardiomyopathies, Myocarditis, Atherosclerosis, hypertension, Diseases of the aorta, Peripheral Vascular Disease**;**

- **Diseases of the Respiratory System:** Disease of the Upper and Lower Respiratory Tract**,** Bronchial Asthma, chronic Obstructive Pulmonary Disorder (COPD), Cor pulmonale**,** Acute and Chronic Respiratory Failure**,** Neoplasm of lung, Diseases of Pleura, Mediastinum and Diaphragm**;**
- **Diseases of the Gastrointestinal System:** Diseases of the esophagus, Gastro-esophageal Reflux Disorder (GERD)**,** Peptic Ulcer, Gastritis and other diseases of the stomach**,** Inflammatory diseases of small and large intestine**,** Diverticulosis, Malignancy of stomach, small intestine, colon and rectum**,** Mal-absorption syndrome**,** Diseases of the peritoneum**;**
- **Diseases of the Liver and Biliary Tract:** Diagnostic procedures in liver disorders**,** Derangement of hepatic/biliary metabolism**,** Acute Hepatitis**,** Chronic active hepatitis**,** Cirrhosis of liver**,** Tumors of liver, Liver Abscess**,** Infiltrative and Metabolic diseases of liver**,** Disorders of Gall Bladder and Bile Duct**,** Ascites**;**
- **Diseases of the Pancreas:** Diagnosis of pancreatic diseases**,** Acute and chronic pancreatitis**,** Tumors of pancreas**;**
- **Diseases of the Kidney and Urinary System:** Acute Renal Failure, Chronic Kidney Disease, Glomerulonephritis, Nephrotic syndrome, Vascular diseases of the kidney, Infections of the urinary tract, Obstructive Uropathy, Urinary Incontinence, Nephrolithiasis, Renal Cell Carcinoma**;**
- **Diseases of the Endocrine System:** Thalamus and pituitary gland, Diseases of the Anterior Pituitary, Disorders of the neuro-hypophysis, Hyperthyroidism and hypothyroidism, Hyperparathyroidism and hypoparathyroidism, Diabetes Mellitus, Hyperinsulinism /Glucagon and its effects, Diseases of the Adrenal Cortex and Medulla, Diseases of the testes and ovaries**;**
- **Diseases of Blood and Blood Forming Organs:** Blood formation and destruction, Anemia, Bone Marrow Failure, Blood Groups and Blood Transfusion, Myeloproliferative disorders, Abnormal hemoglobins, Disorders of platelets, Hemorrhagic disorders, Leukemia, Lymphomas, Diseases of Spleen and Reticulo-endothelial system**;**
- **Diseases of Connective Tissue, Joints and Bones:** Rheumatoid Arthritis, including Late Onset Rheumatoid Arthritis (LORA), Ankylosing spondylitis, Systemic Lupus Erythematosus, Vasculitis, Scleroderma, Polymyalgia Rheumatica, Gout/ Pseudogout, Osteoarthritis, Diseases of bone - Metabolic and Endocrine, Tumors of Bone**;**

- **Diseases of the Nervous System:** Diagnostic methods in Neurology, Coma and altered mentation, Headache, Epilepsy, Sleep Disorders, Diseases of Cranial Nerves, Cerebro-vascular Diseases, Diseases of the Spinal Cord, Diseases of the Peripheral Nervous System, Pyogenic infections of the CNS, Viral Infections, Multiple Sclerosis and other demyelinating diseases, Metabolic and Nutritional diseases of brain, Degenerative diseases**;**
- **Diseases of the Skin:** Skin lesions of general medical significance, Generalized pruritus, Pressure ulcers, Pigmentation of the skin, Disorders of Melanin Metabolism, Photosensitivity and other reactions to light, Hirsutism and Alopecia, Cutaneous manifestations of internal malignancy, Psoriasis, Scabies, Fungal infections of skin**;**
- **Psycho-Geriatrics:** Epidemiology of Mental Disorders in the elderly, Definition and Classification of Psychiatric Disorders, Delirium /Acute confusional state, Dementia, Depression in old age, Bipolar disorder, Functional psychiatric disorders in old age, Personality and behavioral disorders, Psychogeriatric service - Principles of treatment, Management of Psychiatric Illness, Alcoholism and the elderly patient, Care-giver problems

Paper III: Applied Geriatrics and Geriatric syndromes:

- **Applied Geriatrics:** How are older patients different?**,** Common patterns of disease in old age**,** Alteration in pain and temperature responses**,** Missing Symptoms**,** Complications of Illness, Non-specific presentations**,** Masking by known disease, History taking in the elderly**,** Physical Examination of the old patient**;**
- **Investigations in the elderly:** Policy and interpretation, Radiological, Hematological & Biochemical investigations**,** ECG, Urinalysis**,** Radio isotope tests, Bone Scan**,** Imaging – Ultrasound, CT Scan, MRI**,** How much to investigate?, Concept of normal range;
- **Immunology:** Genetic aspects of Immunity and Immunological Diseases, Mutation**,** Alternative theories of Aging, Cancer**,** Immunological Surveillance**;**
- **Nutrition:** Nutritional requirement, Changes in total body mass and body composition, Nutritional Assessment, Nutritional deficiency in old age, Osteoporosis, Osteomalacia and Vitamin D, Iron and Vitamins, Recommended intake of nutrients, Prevention of nutritional deficiency;

- **Cardiovascular System:** Physiology and Pathology of Cardiovascular system in old age**,** Investigation of Heart Diseases in old age**,** Cardiac Arrhythmias, Coronary Artery Disease and Acute Myocardial Infarction**,** Hypertension and Hypertensive Heart Disease, Postural Hypotension, Valvular Heart Disease, 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**,** Peripheral Neuropathy, Disorders of Spinal cord and Nerve Roots**,** Neoplasia**;**
- **Genitourinary System:** Structural changes with 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**,** Gynecological disorders in the elderly**;**
- **Disorders of the Special Senses:** Disorders of the Eye, Hearing Disturbances, Disturbance of Taste and Smell, Dental Problems;
- **Infections in the Elderly:** Host Defenses - Natural Barriers**,** White Cell response, Immune mechanism, Diagnosis of Fevers**,** Urinary Infection - Diagnosis and Treatment, Pneumonias - Cause, Diagnosis and Treatment, Septicemia, Bacterial Endocarditis, Antibiotic Treatment**,** Rational Use of Antibiotics;
- **Gastro-intestinal system:** Changes with age**,** Investigations of the Gastro-intestinal tract**,** Disorders of the mouth, GERD / Hiatus Hernia, Acid Peptic Disease, Disease of the Pancreas**,** Diseases of the small Intestine, Diseases of the large Intestine, Fecal Incontinence, GI Malignancy**,** Disease of the liver and Biliary System, Constipation – Prevention and Management;
- **Respiratory System:** Changes with age, Infections of the Respiratory System**,** Bronchial Asthma, Chronic Obstructive Airway Disease, Cor Pulmonale, 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, Giant Cell Arteritis, Vasculitis, Osteoporosis, Osteomalacia;
- **Hematopoietic System:** Changes with aging**,** Anemia in the elderly, Leukemias and Lymphomas**,** Para-proteinaemia, Myelodysplastic syndromes**,** Disorders of Hemostasis;
- **Dermatology:** Aging skin, Senile purpura, Bed sores, Pruritus/ Intertrigo, Cancers/benign lesions, Pemphigus/ pemphigoid, Herpes Zoster, Leg ulcer;
- **Malignancy in old age:** Incidence, Clinical Significance, Presentation**,** Investigation and Management**,** Counseling, Pain and Palliative care
- **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
- **Geriatric Syndromes:** Dementia, Delirium, Falls, Frailty, Sarcopenia, Incontinence, Immobility, Acute deconditioning, Malnutrition, Functional dependence, Gait instability,
- **Comprehensive care:** Comprehensive Geriatric Assessment (CGA), Assessment and management of Geriatric syndromes, Comprehensive care and management plan, Liaison services
- **Special Problems:** Pressure Sore**,** Care of the Chronically ill, Care of patients with terminal illness, Spiritual needs**,** Nursing home placement, Advanced Directives, End of life care.

Paper IV: Social and Preventive Geriatrics and Advances in Geriatrics

- **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,

- **Policies and Models of care:** 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**: - Self determination an decision making in treatment options - Informed Consent - Quality of life - Age limits on health care, Euthanasia - Acts of Omission and Commission**;**
- **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**;**
- **Rehabilitation:** The concepts and History of Rehabilitation**,** The goals of Rehabilitation, 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, 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:** Advances in the field of geriatrics and management of geriatric syndromes like Alzheimer's Disease, Parkinsonism, Osteoporosis, Sarcopenia, Frailty, Urinary Incontinence, Falls / Prevention of Fractures, etc.

Practical exit exam

A. Practical: 300 marks

- Four semi long cases (1 case from Neurology, 2 cases from Respiratory/Cardiology/Abdomen, 1 case with Geriatric syndrome/multimorbidity) (40 min for each case);
    - 4 x 75 = 300 marks

B. Viva Voce: 100 Marks

- All examiners will conduct viva voce – 30 minutes per candidate;
    - 4 X 25 = 100

MODEL THEORY QUESTION PAPERS

M.D. DEGREE EXAMINATIONS

GERIATRIC MEDICINE

Paper I

Basic Sciences related to older adults and Gerontology

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

1. What are the physiological changes with ageing in heart and lungs (5 + 5)
2. A 70 year old male comes with complain of acute onset giddiness and ipsilateral motor weakness. What will be the area of infarct and the culprit vessel? Discuss about the posterior circulation of brain. (4 + 6)
3. What are the adverse impact of polypharmacy in older adults?
4. Write a note on the types of Randomized controlled trials. Discuss the advantages and disadvantages of conducting RCT in older adults. (4 + 6)
5. What are the mechanisms of action of anti-obesity medications and how it affects the efficacy of the treatment?
6. Write a diet prescription for a robust older person without any co-morbidities. What are all the diet modifications needed in a frail older person of CFS-6? (5 + 5)
7. Describe the different drug delivery systems for patients with COPD. What are the challenges of these system for use in frail older patients?
8. Write note on autonomic function assessment in older patients.
9. A 68 year old female presents with complaint of fall during her morning walk. How will assess the gait abnormalities in this patient?
10. A 72 year old male presents with asymmetrical flaccid weakness of both lower limbs with sensory involvement. Where is the anatomical lesion and why? Draw a cross section of spinal cord and mark the tracts. (7 + 3)

M.D. DEGREE EXAMINATIONS

GERIATRIC MEDICINE

Paper II

Clinical Geriatrics and psycho-geriatrics

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

1. What is the latest definition of Hypertension? What is the threshold of starting anti-hypertensive treatment in older adults? Explain. (3+7)
2. Define Pyrexia of unknown origin and explain the investigative approach in a 65 year old patient.
3. What is the definition of ventilator associated pneumonia? How will you manage this condition?
4. A 68 year old lady presents to the wellness clinic for cancer screening. What are the appropriate strategies for her?
5. A 70 year old male presents with fatigue. On evaluation found to have total count of 1,25,000 with 3% blasts in peripheral smear, no lymphadenopathy. How will you manage this patient?
6. What are the non-pharmacological and pharmacological management of generalized anxiety disorders in older adults?
7. A CKD patient presents with calcium of 8.0mg/dL and phosphate of 6.4mg/dL. How will you approach this patient and what are the treatment goals pertaining to this condition?
8. Explain the vaccination strategies in an older person.
9. A patient presents with numbness in all 4 extremities. What are the causes and how will you approach this patient?
10. What are the risks and benefits of treating subclinical hypothyroidism in an older adult?

M.D. DEGREE EXAMINATIONS

GERIATRIC MEDICINE

Paper III

Applied Geriatrics and Geriatric syndromes

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

1. An 80 year old on anticoagulation for atrial fibrillation presents to the emergency with one episode of hematemesis. How will you manage this patient?
2. How will you risk stratify and manage a 75 year old female with multiple myeloma?
3. You are called for assessment of delirium in a post hip hemiarthroplasty patient. How will you approach?
4. A 70 year old man comes to with complaints of fatigue, loss of libido and erection. How will you approach and manage this patient?
5. Discuss the approach and strategies for management of hyperkalemia in a 79 year old patient.
6. An 82 year old male patient with suspected prostate cancer refuses biopsy. How will you approach the situation?
7. Describe the approach to a patient with recurrent falls?
8. Define mild cognitive impairment. What are the management strategies available for MCI?
9. How will you evaluate and manage a 66 year old female with bilateral symmetrical small and large joints arthritis for 4 months, with prolonged early morning stiffness?
10. What are the reversible causes of urinary incontinence? What are the non-surgical management that you will consider?

M.D. DEGREE EXAMINATIONS

GERIATRIC MEDICINE

Paper IV

Social and Preventive Geriatrics and Advances in Geriatrics

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

1. Describe the recent advances in the management of Heart Failure with Preserved Ejection Fraction.
2. Describe the disease modifying treatment in the management of Alzheimer's dementia. What are the risk vs benefit in such treatment?
3. What are the clinical manifestation and management of Metabolic Associated Fatty Liver Disease?
4. Enumerate the recent advances in the COPD classification as per latest GOLD guidelines and their importance in the management.
5. Why are older adults considered as vulnerable population in medical research? What are the ethical challenges in enrolling or excluding older adults in medical research? (5+5)
6. While doing geriatric assessment of a breast cancer patient, you notice that the attender is her husband, 74 years and with mild frailty. How will you assess the care giver and what are the common problems among caregivers?
7. A patient presents to your OPD with history of physical abuse by his son. What are the regulations available for the safety and dignity of this patient? How will you help this patient?
8. How does the assessment of frailty status help in the management decision in an older adult? Explain with examples.
9. What are the challenges in providing care for an older person at home?
10. What are the management strategies of non-motor symptoms in Parkinson disease?

Annexure 1 (Part A)

Key Capabilities in the Practice of Geriatric Medicine

Num	Key capabilities	Minimum expected level of performance at months					
		6	**12**	**18**	**24**	**30**	**36**
KNOWLEDGE AND SKILLS							
1	**Diagnosis and Management of common medical symptomatology in older patients attending OPD** *(Common symptoms, but not limited to)* Chest Pain, Abdominal pain, Headache, Joint pain, Fever, Syncope, Dizziness, Vertigo, Fatigue, Weakness, Sensory disturbance, Gait disorders, Falls, Delirium, Coma, Cognitive disorders, Sleep disorders, Disorders of vision, hearing, smell and taste, Oral manifestation of diseases, Dyspnea, Cough, Hemoptysis, Hypoxia, Edema, Palpitation, Dysphagia, Unintentional weight loss, Vomiting, Diarrhea, Constipation, Gastrointestinal bleeding, Jaundice, Abdominal swelling, Dyspepsia, Cysitis, Azotemia and urinary abnormalities, Fluid and Electrolyte imbalances, Acidosis and Alkalosis, Skin manifestations, Anemia, Bleeding, Thrombosis, Swelling, Ulcer	1,2	3	4	4	5	5
2.	**Diagnosis and Management of Geriatric syndromes in older patients** ● Comprehensive Geriatric Assessment ● Frailty syndrome ● Falls ● Mobility issues ● Cognitive impairment ● Malnutrition ● Sarcopenia ● Osteoporosis ● Incontinence of urine and feces	1,2	3	4	4	5	5

Num	Key capabilities	Minimum expected level of performance at months					
		6	12	18	24	30	36
	● Depression ● Anxiety disorders ● Polypharmacy ● Peri-operative management ● Pressure ulcers ● Immunology and vaccination ● Preventive health & Healthy ageing						
3.	**Diagnosis and management of older patients admitted with systemic diseases** ▪ Infection and diseases ▪ Fluid and electrolyte disturbance ▪ Diseases of the Cardiovascular system ▪ Diseases of the Respiratory system ▪ Diseases of the Gastrointestinal system ▪ Diseases of the Liver, biliary tract, pancreas ▪ Diseases of the Kidney and Urinary system ▪ Diseases of the Endocrine system ▪ Diseases of the Blood and blood forming organs ▪ Disease of connective tissue, joints and bones ▪ Diseases of the Nervous system ▪ Cancers ▪ Diseases of the skin ▪ Mental disorders ▪ Environmental diseases	1,2	3	4	4	5	5
4.	**Diagnosis and management of acute medical emergencies in older patients**	1,2	3	4	4	5	5
5.	**Liaison services** ● Geriatric-oncology liaison		1	2	3	4	5

Num	Key capabilities	Minimum expected level of performance at months					
		6	12	18	24	30	36
	● Ortho-geriatric liaison ● Peri-operative geriatric care						
6.	**Care models** ▪ Outpatient care ▪ Inpatient care ▪ Day care ▪ Transitional care ▪ Long-term care ▪ Teleconsultation ▪ Community outreach care ▪ Home care ▪ Knowledge on the type of patients, resources, challenges, requirements in these facilities, and ability to prescribe individualised management plan.			1, 2	3, 4	4, 5	4, 5
7.	**Pain and palliative care, End-of-life care, Ethical issues** ● Knowledge of pain assessment, treatment modalities, referral for interventions ● Knowledge and ability to manage Elder abuse, End-of-life situation, withdrawal of life support, do-not-resuscitate, Advanced directives, etc. ● Knowing the ethical issues in various health care setting and clinical conditions. ● Managing patients and caregivers with empathy and professionalism		1	2	3	4	5
8.	**Gerontology** ● Knowledge on normal and abnormal aging**,** ● Knowledge on Theories of aging, Metabolic and Structural aspects of aging, Biochemical changes in				1	1	1

Num	Key capabilities	Minimum expected level of performance at months					
		6	12	18	24	30	36
	tissues ● Knowledge on physiological changes in the organ system, Aging in tissues and cells, ● Knowledge on Atherosclerosis and aging, Ecology of Human Senses, The milieu interior and aging ● Anti-ageing research, senolytics						
9.	**Clinical data and research** A- Clinical data and research B- Participation and presentation in journal club	1	2	3	4		5
10.	**Social activities**						
	● Health camps, Community outreach initiatives ● Visit to Long-term care facility or old-age home, ability to do assessment and make a management plan		1	2	3	4	5
11.	**Adherence to GCP Guidelines (Good clinical practice guidelines)** Professionalism, Medical Ethics, Patient safety and communication	1	2	3	4	4	4
12.	**Leadership and Teamwork capabilities** Teaching, Supervising and Teamwork capabilities			1	2	3	4
Affective Domain							
13.	**Attitude, Relationships and communication skills** **For learning objectives and assessment -Refer** Affective domain	1	2	3	4	4	4

Learning Objectives for Key Capabilities

1. **Diagnosis and Management of common medical symptomatology in older patients attending OPD**
    - Takes a detailed history related to the symptoms and performs clinical examination to make accurate clinical diagnosis
    - Considers appropriate differential diagnosis
    - Asks for appropriate investigations for workup and confirmation of diagnosis
    - Performs lab investigations and other OPD based investigations
    - Interprets the results of investigations
    - Evaluates for associated co-morbidities, associations, and systemic complications
    - Seeks appropriate specialist opinion or referral
    - Provides the appropriate treatment which is evidence based and patient centered
    - Explains in detail the instructions to be followed and counsels on treatment compliance and adherence and follow up.
    - Provides advice on general and supportive measures for overall wellbeing
    - Assesses patient's response to treatment and considers alternative therapeutic plan or considers alternative diagnosis.
    - Addresses any psycho-social issues of older adults.

2. **Diagnosis and Management of Geriatric syndromes in older patients**
    - Take detailed history and do necessary examination for the diagnosis of Geriatric syndromes
    - To do Comprehensive Geriatric Assessment (CGA) for all older patients
    - To make individual management plan as per the CGA and involve necessary multi-disciplinary team for the patient care
    - To evaluate and manage reversible causes, and to reassess
    - To order necessary investigations, to perform necessary lab tests, to interpret the tests
    - To seek specialist opinion wherever required
    - To provide health education to patients and their care givers
    - To assess care giver status and address their concerns

3. **Diagnosis and management of older patients with systemic diseases admitted in ward:**
    - Identifies social, economic, environmental, biological and emotional determinants of patients, and institutes diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to patients.
    - To plan appropriate investigation, monitoring, treatment plan, and documentation skills
    - Monitors vitals, sample collection, administers fluids and drugs, dressing, compresses, wound care
    - Follows hospital infection control practices like hand hygiene, barrier nursing, reverse barrier nursing
    - Provides supportive care and follows basic principles of rehabilitation.
    - Offers basic life support measures during emergencies
    - Evaluates for associated co-morbidities, associations, and systemic complications and seeks appropriate specialist opinion or referral and liaise with them for optimal management plan of patients
    - Presents cases in a clear and concise manner highlighting the relevant points and questions to be answered and involves in clinical decision making
    - Safely and effectively manages disease and treatment-related complications of patients taking into consideration acute and chronic medical co-morbidities
    - Provides the appropriate treatment which is evidence based and patient centered
    - Assesses patient's response to treatment and considers change in treatment plan or reconsiders the diagnosis made
    - Promptly identifies critical laboratory values and the acutely deteriorating patient, institutes the appropriate initial medical management, and seeks appropriate advice, including from other specialties
    - Communicates effectively and compassionately with patients and care givers regarding disease prognosis and treatment offered
    - Clearly communicates the benefits and risks of available treatment options, including those available within clinical trials, to enable informed consent
    - Completes the documentation of treatment summary, prescribes medication and creates monitoring protocol and explains to patient the need for further follow-up
    - Communicates and works effectively with relevant multi-professional teams to provide appropriate holistic in-patient care and safe and timely hospital discharge

- Respects the expertise, viewpoints and responsibilities of all members and helps foster a supportive and collaborative environment for open discussion
- Documents morbidity and mortality data relevant to the assigned situation

4. Diagnosis and management of acute medical emergencies in older patients

- Knows the signs and symptoms, approach, diagnosis and management of acute medical emergencies in older adults
- Knows doses of pharmacological agents, side effects, drug-interactions to treat acute emergencies
- Perform lifesaving skills like Advanced Cardiac Life Support, etc.
- Make judgement in institution of life saving procedures and drugs
- Ability to use resources appropriately
- Communicates effectively with other health care professionals for further management of the patient
- Communicates effectively to patient/family for shared decision making

5. Liaison services

- Develops skills to work with team members and ability to offer liaison services
- Knowledge on Geriatric oncology services, ability to do CGA and make individualized management plan
- Knowledge on Ortho-geriatric services, ability to provide medical care in patients with fractures and other orthopedic problems
- Knowledge on peri-operative geriatric care, ability to do pre-operative assessment and rehabilitation, post-operative assessment, preventing and managing peri-operative complications

6. Care Models

- Knowledge on various care models – Outpatient care, Inpatient care, Day care, Transitional care, Long-term care, Teleconsultation, Community outreach care, Home care, etc.
- Knowledge on referring or choosing the right setting for the management of the patients
- Knowing the resources available in each setting, requirements in these facilities, and the challenges
- Ability to prescribe individualized management plan appropriate to the setting
- Deliver care appropriate to the setting

7. Pain and palliative care, End-of-life care, Ethical issues

- Knowledge of pain assessment, treatment modalities, referral for interventions
- Knowledge of palliative care for patients with aggressive diseases with high morbidity and mortality
- Knowledge and ability to manage Elder abuse, End-of-life situation, withdrawal of life support, do-not-resuscitate, Advanced directives, etc.
- Knowing the ethical issues in various health care setting and clinical conditions.
- Managing patients and caregivers with empathy and professionalism

8. Gerontology

- Knowledge on normal and abnormal aging**,**
- Knowledge on Theories of aging, Metabolic and Structural aspects of aging, Biochemical changes in tissues
- Knowledge on physiological changes in the organ system, Aging in tissues and cells,
- Knowledge on Atherosclerosis and aging, Ecology of Human Senses, The milieu interior and aging

9A. Clinical Data & Research

- Develops skills as a self-directed learner, recognizes continuing educational needs; uses appropriate learning resources and critically analyzes relevant published literature in order to practice evidence-based medicine in older adults
- Understands the importance of accurate and secure collection of clinical data every day.
- Actively participates in departmental Morbidity & Mortality Meeting and contributes to clinical data collection
- Ability to interpret clinical data and suggest improvement measures accordingly
- Understands principles of research and academic writing
- Demonstrates competence in basic concepts of research methodology and epidemiology
- Recognizes knowledge gaps and lacunae in current practice and formulates questions to address the knowledge gap
- Identifies sources of knowledge to answer the question
- Ability to carry out critical appraisal of the literature

- Understands the role of evidence in clinical practice and demonstrates shared decision making with patients
- Identifies validity and risk of bias in evidence
- Appropriate knowledge of research methods, including qualitative and quantitative approaches in scientific enquiry
- Appropriate knowledge of research principles and concepts and the translation of research into practice
- Follows guidelines on ethical conduct in research and consent for research
- Participating in clinical research trials and developing guidelines and protocols to safely implement new therapeutic interventions
- Understands and adheres to the laws, frameworks and guidelines which govern the set up and delivery of clinical trials
- Understands and adheres to trial protocols
- Understands and follows the correct safety reporting requirements, including reporting mechanisms for any deviations from protocol or adverse events
- Understands the roles and responsibilities of regional/ national/ international organizations involved in clinical trials
- Understands public health epidemiology and global health patterns
- Recognizes potential of applied informatics, genomics, stratified risk and personalized medicine and seeks advice for patient benefit when appropriate
- Knowledge of available new therapeutic interventions and potential benefits and risks
- Completes a dissertation project under the supervision of a faculty
- Dissemination of research findings in state/ national/ international conference
- Dissemination of research findings in journal publication
- Participates in workshops, symposium and other Continued Medical Education programmes

9B. Participation and presentation in journal club

- Identification of PICOT, Understanding statistical analysis, identification of type of trials Recognition of knowledge gaps and lacunae in current practice
- Formulation of question to address knowledge gap and lacunae
- Identification of sources of knowledge to answer the question
- Interpretation and critique of evidence

- Determination of validity and risk of bias in evidence
- Application and potential integration of evidence into practice
- Formulation of research study design to answer question
- Execution of research protocol
- Analysis and interpretation of research findings

10.Social activities:

- To participate in community outreach programs
- To participate in medical camps
- To involve in public health education and awareness activities
- Ability to conduct and take part in these activities

11.Adherence to Good clinical practice - Professionalism, Medical Ethics, Patient Safety and Communication

- Aware of legal responsibilities, including safeguarding older adults who are vulnerable groups and other marginalized and underserved population.
- Ability to offer apology or explanation when appropriate
- Ability to lead the clinical team in ensuring that medical legal factors are considered openly and consistently
- Demonstrates communication skills of a high order in explaining management and prognosis, providing counselling and giving health education messages to patients, families and communities
- Timely communication of critical findings to the senior members of the team and documentation of the same
- Ability to convey poor prognosis and bad news professionally to patients and their family
- With respect to interdisciplinary discussions/referrals, demonstrates that he/she seeks to understand the clinical problem under question and the perspectives of the problem from the point of view of different disciplines and communicates clearly his/her and their role/solution to the clinical problem.

12. Teaching, Supervising & Teamwork capability;

- Delivers effective teaching and training to medical students, junior doctors and other health care professionals as a teacher-trainer
- Ensures patient safety during bedside teaching/small group teaching
- Use best practices instructional methods for large group teaching
- Collaboratively identifies learners needs and establishes expectations between teaching and learner
- Efficient use of teaching moments
- Provides appropriate supervision, constructive feedback and coaching during bedside teaching/small group teaching
- Able to supervise less experienced trainees in their clinical assessment and management of patients
- Able to supervise less experienced trainees in carrying out appropriate practical procedures
- Able to act a clinical supervisor to doctors in earlier stages of training
- Provide effective role modelling by teacher
- Function as a productive member of a team engaged in health care, research and education

13. Affective domain

- Should be able 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.
- Always 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.
- Aware of national legislation and legal responsibilities, including safeguarding vulnerable groups
- Behaves in accordance with ethical and legal requirements of the state and the nation
- Ability to offer apology or explanation when appropriate

Good communication skills to explain reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

Annexure 1(Part B)

Core ideas in the practice of key-capabilities

(Learning objectives are mentioned below table)

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
1.	**Biology of Ageing:** i. Describe population ageing, demography, population trends in Indian and world, impact of demographic shift ii. Describe normal ageing process, physiological changes with ageing in different organs, tissues, and cells iii. Describe the theories of ageing iv. Describe metabolic, structural and biochemical changes with ageing in different tissues v. Describe pathological aging process	1	2	3	4,5	5	5
2.	**Geriatric Syndromes:** i. Describe the geriatric syndromes, their epidemiology, relationship with each and the interaction ii. Describe the epidemiology, etiology, risk factor, clinical presentation, assessment, diagnosis and management of - Frailty - Falls, gait instability - Immobility - Disability - Incontinence of urine and feces - Cognitive impairment - Osteoporosis	1	2	3	4,5	5	5

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
	- Sarcopenia - Neurodegenerative disorders - Malnutrition - Pressure ulcers						
3.	**Comprehensive Geriatric Assessment** i. Knowledge and ability to do structured geriatric assessment as per the situation (OPD, Inpatients, Emergency), and patient profile (oncology patients, ortho patients, etc.) ii. Use the information to make a holistic management plan iii. Ability to work with multi-disciplinary team in making the individualized plan	1	2	3	4,5	5	5
4.	**Disease management** Describe the etiology, pathophysiology, clinical features, complications, diagnosis, and management of i. Infections in older adults ii. Fluid and electrolyte imbalances in older adults iii. Cardiovascular diseases in older adults iv. Respiratory diseases in older adults v. Gastrointestinal diseases in older adults vi. Hepato-pancreato-biliary diseases in	1	2	3	4,5	5	5

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
	older adults vii. Diseases of kidney and urinary tract system in older adults viii. Diseases of endocrine system in older adults ix. Blood disorders in older adults x. Immunological diseases in older adults xi. Diseases of joints and bones in older adults xii. Neurological diseases in older adults xiii. Cancers in older adults xiv. Skin diseases in older adults xv. Mental illness in older adults xvi. Environmental disorders, poisoning in older adults						
5.	**Emergency management** i. Demonstrates knowledge of signs and symptoms, diagnosis and management of acute medical emergencies in older adults ii. Demonstrates knowledge of doses of pharmacological agents to treat acute emergencies iii. Demonstrates life saving skills like Advanced Cardiac Life Support, etc. iv. Demonstrates judgement in application of life saving procedures and drugs	1	2	3	4,5	5	5

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
	v. Demonstrates ability to mobilize resources appropriately vi. Communicates effectively with other health care professionals for further management of the patient vii. Communicates effectively to patient/family for shared decision making						
6.	**Rational Drug therapy** i. Knowledge of age related changes in the pharmacokinetics and pharmacodynamics, the impact on dose, impact of co-morbidities on appropriate drug selection ii. Choosing appropriate drugs, interventions for older adults with medical conditions iii. Knowledge of polypharmacy, tools to identify, modes of de-prescribing and appropriate prescribing iv. Knowledge of American Geriatric Society Beers' criteria, STOPP and START criteria v. Knowledge of drug adverse events, drug interactions	1	2	3	4,5	5	5
7.	**Rehabilitation** i. Knowledge on assessment of ability and disability in older adults ii. Knowledge on physical rehabilitation, uses, and mode	1	1	2	3	4	5

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
	iii. Knowledge on social and occupational rehabilitation, environmental modification iv. Knowledge on the safety of older adults and related guidelines and directives						
8.	**Liaison services** i. Knowledge of Geriatric-oncology liaison service, CGA for older cancer patients, and management decision ii. Knowledge of Ortho-geriatric liaison service, pre-operative and post-operative medical management of older adults with fractures and other bony lesions **iii.** Knowledge of Peri-operative geriatric care,						
9.	**Care models** ▪ Knowledge on the functioning, referral criteria, patient/resident profile, facility requirements, challenges, licence requirement in the following facility: i. Outpatient care ii. Inpatient care iii. Day care iv. Transitional care v. Long-term care vi. Teleconsultation vii. Community outreach care	1	1	2	2	3,4	4,5

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
	viii. Home care ▪ Knowledge to do CGA and make a management plan for holistic care						
10.	**Pain and Palliative care** i. Knowledge of pain assessment, treatment modalities, referral for interventions ii. Knowledge of palliative care for patients with aggressive diseases with high morbidity and mortality **iii.** Managing patients and caregivers with empathy and professionalism	1	2	3	4,5	5	5
11.	**Ethical and legal issues, Advance directive, Communication** i. Knowledge and ability to manage Elder abuse, End-of-life situation, withdrawal of life support, do-not-resuscitate, Advanced directives, etc. ii. Knowing the ethical issues in various health care setting and clinical conditions. iii. Ability to communicate with the patient and family members with empathy and professionalism.	1	2	3	4,5	5	5
12.	**Preventive care, Health promotion, and Healthy Ageing** i. Knowledge of National health programmes, schemes, guidelines, and international health promotion	1	2	3	4,5	5	5

No	Core ideas in the practice of key-capabilities	Minimum expected performance at months					
		6	12	18	24	30	36
	measures and guidelines ii. Knowledge of screening of healthy older adults and ability to prescribe healthy ageing measures iii. Knowledge of holistic assessment of older adults and making management plan including health promotion measures iv. Knowledge of Adult vaccination, benefit, and risk v. Knowledge of preventive health check-up, screening for cancers, screening for age related diseases						
13.	**Recent advances** in the disease classification, pathogenesis diagnostics and management of all diseases of older adults; latest updates in national and international guidelines; latest clinical trials and newer research methodologies and treatment principles					1*	1*
14.	**Medical Statistics** The resident should demonstrate the statistics knowledge necessary to: – understand the design of studies – read and use a trial protocol – present and interpret data – interpret results of clinical trials – critically review and evaluate papers				1*	2*	2*

*** Some of the objectives are to be achieved over a longer period (one year)**

Learning objectives for core ideas

Medical statistics

Part 1/2

- Present and summarise individual variables
- Recognise categorical data (nominal, ordinal)
- Recognise discrete and continuous numerical data
- Recognise symmetric and skewed distribution
- Describe the normal distribution
- Interpret bar charts and histograms
- Define and apply measures of central tendency and Spread
- Describe the concept of a source population
- Explain random sampling
- Explain estimation of population statistics
- Describe standard error of a sample mean and of a proportion, and their differences
- Define and use confidence intervals
- Explain reference ranges
- Explain hypothesis testing and estimation
- Contrast Type I and II errors
- Interpret p-values and confidence intervals
- Define and identify the difference between statistical and clinical significance
- Explain the concept of and correction for multiple testing (e.g., false discovery rate, Bonferroni correction)

Part 2/2

- Interpret tests comparing means and percentages
- Interpret the meaning of correlation and regression analysis
- Interpret the meaning of scatter plots
- Calculate and interpret the meaning of sensitivity, specificity, positive and negative predictive values and accuracy
- List types of time-to-event data
- Interpret and describe the principles of Kaplan-Meier and actuarial survival curves
- Understand censorship
- Understand how the KM curves can be derived using algorithms and how to input the data
- Describe the possible methods of summarizing survival data

- Interpret and describe methods used to compare groups:
    a) Logrank test for two or more groups, including ordered groups
    b) Cox's proportional hazards regression model
    c) hazard ratios and their interpretation
- Compare the design and role of phases I-IV of clinical trials
- Explain the need for randomization and the problems with non-randomised studies and historical controls
- Describe the methods of randomisation (simple, block, stratified, minimisation)
- Explain the concepts of blinding/masking
- Describe the possible trial designs: parallel group, cross-over, factorial
- Describe the contents of a trial protocol
- Discuss the ethical basis for research of what constitutes informed consent and reporting adverse events
- Describe the possible measures of response
- Outline the principles of:
    a) sample size calculation
    b) interim analyses
    c) intent-to-treat analysis
    d) early stopping rules
- Outline the role and basic principles of meta-analysis and systemic reviews
- Contrast the design and interpretation of cross-sectional case control and cohort studies
- Define the principles, calculate and interpret odds ratios and risk ratios
- Define incidence, prevalence, mortality rates and standardised mortality rates

Annexure 1 (Part C)

Learning Objectives - Peripheral Posting of MD Geriatric Medicine Residents

- Peripheral posting will be attended by Junior Residents in 2nd, 3rd, 4th and 5th Semester
- Total Duration – 10 months posting across 13 departments
- The student will be assessed in the PERIPHERAL POSTING department
- Attendance and feedback will be sent from the peripheral posting department to the Department of Geriatric Medicine
- Residents should maintain a log of all the procedures done in the posting

Peripheral posting in Emergency Medicine – 2 months

Objectives:

1. Demonstrate knowledge, clinical and technical skills and decision-making capabilities pertinent to the management of older patients presenting to Casualty.
2. Demonstrate awareness of the ethical and medicolegal principles pertinent to older adults

Specific Objectives

1. Basic Life Support
2. Adult Life Support
3. Fluid resuscitation
4. Critical procedures like Endotracheal intubation, Central line insertion, point of care ultrasound
5. Interpretation of electrocardiogram/recognition of important life-threatening findings
6. Demonstrate knowledge and skills of clinical symptoms, investigations, approach, and management of older adults presenting with medical emergency
7. Antibiotic selection policy
8. Management of sepsis
9. Management of Anaphylactic shock
10. Seek appropriate consultation from other health professionals for optimal care of patients

Peripheral posting in Medicine – 1 month

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to medical diseases

Specific Objectives

1. Learn and practice principles of medicine

2. Learn pathophysiology, approach, investigations, and management of medical conditions

Peripheral posting in ICU – 1 month

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to critically ill older adults
2. Practice the principles of comprehensive geriatric assessment and impact on decision in critically ill patients

Specific Objectives

1. To learn the management of critically ill older patients
2. To learn management of ventilation, perfusion, organ support
3. To learn prognostication
4. To communicate with the family and help them take a right decision regarding further management
5. To understand ethical issues and approach with empathy and professionalism

Peripheral posting in Cardiology – 1 month

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to cardiac diseases in older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of cardiac diseases in older adults
2. To learn psychomotor skills like cardioversion, temporary pacing
3. To learn the basics of investigation like ECG, ECHO - indication, procedure, interpretation

Peripheral posting in Neurology – 1 month

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to neurological diseases in older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of neurological diseases in older adults
2. To learn psychomotor skills like lumbar puncture, intrathecal injection, nerve biopsy
3. To learn basics of investigation like nerve conduction studies, CT head, CSF – indication, procedure, interpretation

Peripheral posting in Nephrology – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to renal diseases in older adults
2. Demonstrate knowledge, clinical and decision-making capabilities pertinent to fluid and electrolyte management in older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of renal diseases in older adults
2. To learn psychomotor skills like renal ultrasound, kidney biopsy
3. To learn the basics of investigations like urine analysis, arterial blood gas analysis
4. To learn the indication, procedure, and complications of renal replacement therapy

Peripheral posting in PMR – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to physical rehabilitation of older adults
2. To demonstrate psychomotor skills on physical rehabilitation of older adults

Specific Objectives

1. To learn the etiology, indications, techniques of physical rehabilitation of older adults
2. To learn the etiology, indications, techniques of physical therapy for healthy ageing and fall prevention
3. To learn psychomotor skills including the techniques for prescribing appropriate physical therapy
4. To learn usage of device based physical therapy management in older adults
5. Ability to assess the level of disability and make individualized management plan
6. To learn about prescription of assistive devices, usage of them and the social programs available to get these devices

Peripheral posting in Medical Gastroenterology – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to gastrointestinal system diseases of older adults
2. Demonstrate knowledge, clinical and decision-making capabilities pertinent to hepato-pancreatic-biliary diseases of older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of gastrointestinal diseases in older adults
2. To learn the etiology, pathophysiology, clinical features, approach and

management of hepato-pancreatic-biliary diseases in older adults

3. To learn the psychomotor skills of bedside procedures like ascitic tapping, liver biopsy and to know the indications, procedure, complications, and follow up these patients
4. To understand the indications, procedure, and interpretation of procedures like endoscopy, colonoscopy, ph monitoring, elastography
5. To understand the indications, procedure, prescription, and complication of medical nutrition and different types of nutritional support

Peripheral posting in Medical Oncology – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to cancers in older adults
2. To inculcate comprehensive geriatric assessment in the decision of management plan of older patients with cancer

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of cancers in older adults
2. To learn the chemotherapy drugs, regimen, administration and complications of chemotherapy
3. To practice comprehensive geriatric assessment and use them to make individualized treatment plan
4. To learn the art of breaking bad news, emotional support and care giver support, and practice the same with empathy and professional integrity
5. To learn the palliative care management and pain control
6. To address the social, nutritional, psychological problems in older adults with cancer

Peripheral posting in Psychiatry – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to psychiatric diseases in older adults
2. Demonstrate knowledge on the mental health of older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of psychiatric diseases in older adults
2. To learn the management of BPSD symptoms in dementia patients
3. To learn the ethical principles of approaching patients with mental health issues, and develop professional integrity

Peripheral posting in Pulmonary medicine – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to respiratory diseases in older adults
2. Demonstrate knowledge on National Tuberculosis Elimination Program (NTEP)

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of respiratory diseases in older adults
2. To learn the basics of investigations like chest imaging, spirometry, sleep study, bronchoscopy – indications, procedure, interpretation and complications
3. To learn the management of Tuberculosis as per NTEP

Peripheral posting in Clinical Immunology – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to rheumatological diseases in older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of rheumatological diseases in older adults
2. To learn the disease and medication related complications and their management
3. To learn to make an individualized treatment plan
4. To develop psychomotor skills and knowledge of interventions like joint aspiration, intraarticular injection, musculoskeletal ultrasound with their indication, procedure, and interpretation

Peripheral posting in Endocrinology – 15 days

Objectives:

1. Demonstrate knowledge, clinical and decision-making capabilities pertinent to endocrine diseases in older adults
2. To differentiate physiological and pathological changes in the functioning of various hormones in older adults

Specific Objectives

1. To learn the etiology, pathophysiology, clinical features, approach and management of endocrine diseases in older adults
2. To learn the indication, procedure and interpretation of various investigations like DXA, hormonal assays, etc.

Model Posting schedule:

Month	1	2	3	4	5	6	7	8	9	10	11	12
PG Y1	GM	GM	GM	GM	GM	GM	GM	GM	EMSD	GM	Medicine	GM
PG Y2	GM	ICU	EMSD	Cardio	GM	GM	GM	Neuro	Nephro, PMR	MGE, Med Onc	GM	GM
PG Y3	Psychiatry, Pulmo	Cl. Immuno, Endo	GM	GM	GM	GM	GM	GM	GM	GM	GM	GM

GM – Geriatric Medicine

Peripheral Posting	
Emergency Medicine	2 months
Medicine, MICU, Cardiology, Neurology	1 month each
Nephrology, PMR, Medical Gastroenterology, Medical Oncology, Psychiatry, Pulmonary Medicine, Clinical Immunology, Endocrinology	15 days each

Annexure 2

LOG BOOK

DIAGNOSTIC AND THERAPEUTIC PROCEDURES

The numbers observed, performed with assistance and performed independently are entered during the period of posting and signed by the Senior resident and Faculty in charge.

S.No	Procedure	Number			
		Observed	**Performed with assistance**	**Performed independently**	**Signature of Assessor**
Diagnostic modalities					
1	Comprehensive Geriatric Assessment				
2	Intrinsic capacity assessment				
3	Frailty assessment				
4	Fall assessment				
5	Gait assessment				
6	Cognitive assessment				
7	Sarcopenia assessment				
8	Care giver stress assessment				
Procedures					
1	Pleural tapping				
2	Ascitic tapping				
3	Lumbar Puncture				
4	Peripheral venous cannulation				
5	Central venous catheterization				
6	Endotracheal Intubation				

7	Nasogastric tube insertion				
8	Urinary catheter insertion				
9	POCUS - ECHO				
10	POCUS - Lungs				
11	POCUS - Abdomen				
12	Kidney Biopsy				
13	Bone marrow aspiration and biopsy				
14	Bedside superficial FNAC				
15	Others				

Signature of Student : _____

Signature of Faculty : _____

Details of Interesting cases managed / observed:

Date	Hospital Number	Diagnosis	Interesting / Learning points

(add as many pages as needed)

Scores: 0 (Does not attempt to meet expectations), 1 (Attempting to, but yet to meet expectations), 2 (Meets expectations), 3 (Proficient, independently exhibits responsibility and standards beyond minimum expectations)

JOURNAL CLUB PRESENTATION

Date	Journal	Title of the article	Faculty Score	Faculty sign

SEMINAR PRESENTATION

Date	Title	Faculty Score	Faculty sign

CASE PRESENTATION

Date	System	Final diagnosis	Faculty Score	Faculty sign

Annexure 3

A. WORKPLACE BASED ASSESSMENT – monthly (ward, OPD, peripheral posting)

- To be assessed by the Senior resident/Faculty in charge of the area posted
- This is a general assessment of the work attitude, work ethics and etiquettes of the resident
- Scores: 0 (Does not attempt to meet expectations), 1 (Attempting to, but yet to meet expectations), 2 (Meets expectations), 3 (Proficient, independently exhibits responsibility and standards beyond minimum expectations)

Area of posting: Ward / OPD / Special clinics/ Lab / Others

Period of posting:

Name and Designation of Assessor:

Assessment parameters		**Not assessed**	**0**	**1**	**2**	**3**
Clinical work						
1	Being Punctual to OPD and ward					
2	History and clinical examination					
3	Having instruments for clinical examination					
4	Shows compassion and respect during communication with patient					
5	Adequacy of literature search / discussion / rationale related to diagnosis					
6	Quality of diagnosis					
7	Oral presentation of findings and differential diagnosis with consultants					
8	Following up of patient's investigations and treatment.					
9	Recording number of OPD cases seen per day					

System-based work						
10	Appropriately filling the requisitions for investigations					
11	Appropriately writing prescriptions					
12	Appropriately writing Assessment report and CGA					
13	Appropriately writing management plan and follow up care					
Team work and leadership						
14	Co-ordination and communication with departmental and other department colleagues					
15	Co-ordination and communication with other staff involved in OPD services					
16	Shows interest in teaching juniors, Gives appropriate feedback to juniors					
17	Accepts feedback, self-reflects, and demonstrates willingness to change					
Ethical attributes of clinical practice						
18	Demonstrates autonomy and shared responsibility in patient care					
19	Ensures privacy and confidentiality in patient					
20	Sensitive to medico-legal, socio-cultural and economic issues related to patient care					

Others						
21	Understanding and handling medico- legal aspects as per existent norms					
22	Appropriate documentation					
Leaves taken		Authorized Unauthorized				

Feedback by assessor

Strengths
Limitations
Suggestions for improvement

Signature of assessor: _____

B. IN TRAINING ASSESSEMENT - once in 6 months during the notified exams

- To be assessed by the Faculty in charge
- This is a general overall assessment of the trainee by the supervisor
- Scores: 0 (Does not attempt to meet expectations), 1 (Attempting to, but yet to meet expectations), 2 (Meets expectations), 3 (Proficient, independently exhibits responsibility and standards beyond minimum expectations)

Period of assessment:

Name and Designation of Assessor:

MEDICAL EXPERT	**Not assessed**	**0**	**1**	**2**	**3**
Basic scientific and clinical knowledge relevant to Geriatric medicine and gerontology					
History with adequate detail. Focused, efficient physical examination.					
Clinical judgement: Makes a differential diagnosis & plan of care. Assesses patients; balances risks/benefits of interventions.					
Emergencies: Skills appropriate for the level of training. Communicates effectively and remains calm.					
Overall Competence:					
COMMUNICATOR	**Not assessed**	**0**	**1**	**2**	**3**
Clarity of communication: Attentive listener; counsels appropriately; clear communication with peers					
Presents well during rounds; accurate written records					

Overall Competence:					
PROFESSIONAL	**Not assessed**	**0**	**1**	**2**	**3**
Exhibits honesty, respect, compassion and ethical behavior. Courteous to colleagues					
Accepts feedback and demonstrates willingness to change behavior in response to feedback. Able to self-assess.					
Overall Competence:					
SCHOLAR	**Not assessed**	**0**	**1**	**2**	**3**
Identifies knowledge gaps and develops a self-learning plan. Curious and inquisitive. Critically appraises literature					
Interested in teaching other learners (JRs, UGs). Gives an effective lecture/presentation. Gives and receives feedback.					
Overall Competence:					

Feedback by assessor

Strengths
Limitations
Suggestions for improvement

Signature of assessor: _____

C. COMPETENCY ASSESSMENT - Direct Observation of Procedural Skills (DOPS)

- **These may include (non-inclusive list):** Comprehensive Geriatric Assessment, Frailty assessment, Fall assessment including Gait and Balance assessment, Cognitive assessment, Pre-operative assessment, Medication review, Sarcopenia assessment, Patient and care giver counseling, breaking bad news.
- The resident should approach the assessor for DOPS assessment and should have completed a minimum of one assessment for each procedure.
- To be assessed by the Senior resident/Faculty in charge during the respective postings
- Scores: 0 (Does not attempt to meet expectations), 1 (Attempting to, but yet to meet expectations), 2 (Meets expectations), 3 (Proficient, independently exhibits responsibility and standards beyond minimum expectations)

Date of assessment:

Procedure assessed:

Name and Designation of Assessor:

Assessment parameters	**Not assessed/ Not applicable**	**0**	**1**	**2**	**3**
Exhibits knowledge of indications, relevant anatomy, and technique					
Confirms patient identification					
Appropriate history and examination done					
History of contraindications noted (allergies, pacemakers, Raynaud's phenomenon etc)					
Communicates procedure and risks to patient					
Obtains informed consent					
Use of appropriate Anaesthesia					
Follows Universal safety precautions					

Follows strict aseptic measures					
Exhibits knowledge of equipment and uses equipment appropriately with appropriate safety precautions					
Demonstrates appropriate technical skills/follows right procedure					
Seeks help when required					
Demonstrates good communication skills with patient/staff					
Demonstrates good judgement in case of difficulties or unforeseen events					
Documentation of procedure done					
Quality of reporting of results of procedure done					
Appropriate post procedural advice given to patients					
Quality of prescription					
Follow-up advice given					
Appropriate biomedical waste management done					

Assessment	**Self-evaluation by trainee**	**Feedback by assessor**
Strengths		
Limitations		
Suggestions for improvement		

Signature of assessor: _____

D. KNOWLEDGE AND COMPETENCY ASSESSMENT

(a) Mini-Clinical Evaluation Exercise (Mini-CEX) - once in 6 months during the notified exams

- To be assessed by the faculty in charge
- Duration of evaluation – 15 to 20 minutes.
- The mini-CEX form can be downloaded from https://www.abim.org/Media/qlvp1fhb/mini-cex.pdf.
- The assessing faculty should provide timely and specific feedback to the resident
- Scores: 0 (Does not attempt to meet expectations), 1 (Attempting to, but yet to meet expectations), 2 (Meets expectations), 3 (Proficient, independently exhibits responsibility and standards beyond minimum expectations)

Assessment parameters	**Not assessed/Not applicable**	**0**	**1**	**2**	**3**
Medical Interviewing Skills					
Physical Examination Skills					
Communication skills					
Clinical Judgement					
Management skills					
Counselling skills					
Professionalism/Humanistic Qualities					
Organisation/Efficiency					

Assessment	**Self-evaluation by trainee**	**Feedback by assessor**
Strengths		
Limitations		
Suggestions for improvement		

Signature of assessor: _____

(b) Case based Discussions (CbD) – once in 6 months during the notified exams

- To be assessed by Faculty in charge
- The resident should approach the assessor with cases in whose management he/she was actively involved, and the assessor chooses one case for discussion. The discussion should be focused on the candidate's record keeping, clinical reasoning and decision-making abilities with respect to patient assessment, investigation, referral, treatment and follow-up.
- Scores: 0 (Does not attempt to meet expectations), 1 (Attempting to, but yet to meet expectations), 2 (Meets expectations), 3 (Proficient, independently exhibits responsibility and standards beyond minimum expectations)

Assessment parameters	**Not assessed/Not applicable**	**0**	**1**	**2**	**3**
Demonstrates clarity in structure and content of the patient's notes					
Appropriate clinical assessment					
Clinical reasoning - relates the patient's symptoms to the examination findings to form a diagnosis and considered appropriate differential diagnosis					
Assessment of risk of complications and appropriate management					
Assessment and treatment of medical comorbidities					
Appropriate referrals done and expert opinions taken					
Critical selection of investigations that will help with diagnosis as well as management					
Right choice of treatment that is evidence-based and appropriate for the patient considering co-					

morbidities, complications, affordability and availability					
Demonstrates knowledge on prognosis of patient's condition					
Informed the patients/attenders on critical decisions and consent taken wherever appropriate (eg-use of immunosuppressants, need for contraception, etc)					
Inclusion of patient education and preventive measures in management plan					
Inclusion of plan for follow-up					

Assessment	**Self-evaluation by trainee**	**Feedback by assessor**
Strengths		
Limitations		
Suggestions for improvement		

Signature of Assessor: _____