

Dr.NTR University of Health Sciences

Vijayawada

SYLLABUS

**“POST DOCTORAL FELLOWSHIP
COURSE IN GERIATRIC MEDICINE”**

for the academic year 2018-19

FELLOWSHIP COURSE IN GERIATRIC MEDICINE

1. **Proper name of the course:** Fellowship course in Geriatric Medicine
2. **Duration of the course:** One year
3. **I. Eligibility criteria for admission:** M.D General Medicine/DNB General Medicine recognized by the Medical Council of India / National Board of Examinations.
II. Intake capacity: 2 per year

4. Complete curriculum of the course:

4.1. Statement of Goals & Specification of Objectives:

A. Goal:

The goal of this curriculum is to create a cadre of medical professionals in care of the older people who would have knowledge about the age related biological changes

- i) Provide comprehensive health care and rehabilitation of the elderly
- ii) Provide undergraduate and postgraduate training
- iii) Carry out research in geriatrics and gerontology

B. Objectives:

After completion of fellowship course in geriatric medicine, the physician should be able to fulfil the following objectives.

- i) To provide necessary care to older people in both hospital and home settings
- ii) To organize and implement different health care programs for the oldest person
- iii) To 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.

4.2. Course Content:

Contents of the course:

- A. **Basic sciences:** Biology of human ageing, epidemiology of human ageing, immunology of human ageing, effect of ageing on different organs, death
- B. **Clinical geriatric medicine:** cardiology, pulmonary medicine, gastroenterology, endocrinology, nephrology, neurology, hematology and oncology
- C. **Allied specialties:** urology/ andrology/ gynaecology, ophthalmology/ENT/ dentistry, rheumatology, psychiatry, pre and post anesthetic evaluation and management

- D. Preventive geriatrics, rehabilitation, end of life, legal, ethical and economic aspects.
- E. **General Topics:** Research methodology and Teaching methodology

4.3. SYLLABUS

4.3.1 GERIATRIC MEDICINE

a. GENERAL:

- Demography, World Trends
- Trends in India and Developing countries
- The Aged and Society – Past and Present
- The evolution of Geriatric Medicine

b. GERONTOLOGY:

- 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

c. GERIATRIC MEDICINE:

- How are elderly patients different?
- Common patterns of disease in old age
- Alteration in pain and temperature responses
- Atypical presentation
- Complications of Illness
- Non specific presentations
- Masking by known disease
- History taking in the elderly
- Physical Examination of the old patient

d. INVESTIGATIONS IN THE ELDERLY:

- Policy
- 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

e. IMMUNOLOGY:

- Genetic aspects of Immunity and Immunological Diseases

- Mutation
- Alternative theories of Aging
- Cancer
- Immunological Surveillance

f. 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

g. 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
- Cor Pulmonale
- Chronic Congestive Heart Failure
- Aortic aneurysm
- Bacterial Endocarditis
- Peripheral Vascular Disease
- Deep Venous Thrombosis and Pulmonary Embolism

h. 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

i. 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 & Nerve Roots
- Neoplasia

j. 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
- Gynaecological disorders in the Elderly

k. DISORDERS OF THE SPECIAL SENSES:

- Disorders of the Eye
- Hearing Disturbances
- Disturbance of Taste and Smell
- Dental Problems

l. INFECTIONS IN THE ELDERLY:

- Host Defences – 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

m. 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

n. RESPIRATORY SYSTEM:

- Changes with Age
- Infections of the Respiratory System
- Chronic Obstructive Airway Disease
- Bronchial Asthma

- Bronchogenic carcinoma
 - Respiratory Abnormalities in Extra-pulmonary conditions
 - Respiratory Failure
- o. MUSCULOSKELETAL SYSTEM:
- The aging joints
 - Degenerative Joint Disease
 - Gout, Pseudogout
 - Rheumatoid Arthritis
 - Infective Arthritis
 - Myopathy, Myositis, Polymyalgia Rheumatica
 - Temporal arthritis
 - Osteoporosis
 - Osteomalacia
- p. HEMATOPOIETIC SYSTEM:
- Changes with Aging
 - Anaemia in the elderly
 - The Leukaemias and Lymphomas
 - Paraproteinaemia
 - Myelodysplastic syndromes
 - Disorders of Haemostasis
- q. DERMATOLOGY:
- The Aging Skin
 - Pruritus
 - Cancers / Benign Lesions
 - Pemphigus & Pemphigoid
 - Senile Purpura
 - Herpes Zoster
 - Intertrigo
 - Leg Ulcer
 - Hansen's Disease
- r. MALIGNANCY IN THE ELDERLY:
- Incidence, Clinical Significance
 - Presentation
 - Investigation and Management
 - Counselling
- s. PHARMACOLOGICAL ASPECTS OF AGING:
- Pharmacokinetics in the elderly
 - Pharmacodynamics
 - Drug Selection and Dosage
 - Drug Interactions
 - Adverse Drug Reactions
 - Drug Compliance
 - Drug Misuse
- t. 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

u. SPECIAL PROBLEMS:

- Pressure Sore
- Care of the Chronically ill
- Care of patients with terminal illness
- Religion and Illness
- Falls
- Nursing home placement
- Syncope
- Frailty
- Palliative care

4.3.2 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 Behavioural disorders
- Psychogeriatric service – Principles of treatment
- Management of Psychiatric Illness
- Alcoholism and the elderly patient
- Care-giver problems

4.3.3 SOCIAL AND PREVENTIVE GERIATRICS INCLUDING REHABILITATION

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 urbanisation and industrialisation with respect to Elders
- Financial aspects – sources of Income, Old age pension

- Role of Govt and NGOs in Socio-Economic status of the Elderly
- 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
- Psychogeriatric 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 health care
- Life sustaining measures
- 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
- Organisation 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

4.3.4. ADVANCES IN GERIATRIC MEDICINE:

- Alzheimers Disease
- Parkinsonism
- Osteoporosis
- Urinary Incontinence
- Falls / Prevention of Fractures
- Parenteral Nutrition
- Stroke Clinic
- Memory Clinic
- Anti Aging research
- Frailty
- Inflammatory markers

5. TEACHING SCHEME:

5.1 Teaching Learning Methods and Activities:

Learning in Fellowship program shall be essentially “Autonomous & Self directed”.

Trainee students are encouraged to largely carry out self learning. They are expected to seek knowledge & skill on their own initiative. Sound knowledge of Geriatrics is to be acquired entirely by self study & by participating in various teaching activities of the department.

The following organized learning experiences should be provided to the students. Time table for these programs will be drawn every six months

- Case presentation & case management in OPD & Indoor wards: The student will present cases daily on clinical rounds to the faculty members of the department. The students shall be provided facilities to manage cases of higher and greater complexity by allowing them graded responsibility.

- PG lectures, Seminars, symposia, panel discussions of suitable topics: These will be held once a week. Topics of common interest to fellows will be covered in the program.
- Journal clubs: These will be held once a week.
- Medical audit / fatality case discussions: This will be done once in 15 days. Interdepartmental meetings will be organized with Cardiology, Neurology, Psychiatry, Rehabilitation, Nephrology, Gastroenterology, Haematology, Dermatology, Intensive Medical Care Unit, Thoracic Medicine, Rheumatology, Medical Oncology & diabetology departments as required.
- Departmental clinical work: Research. The fellow will be also involved in various clinical research work being undertaken in the department by the faculty members.
- Teaching experience: The fellows will participate in all aspects of teaching specially practicals, demonstration & tutorials. During their tenure, they will be working under faculty members on rotation basis as per the allotment of the teaching schedule.
- Community services: The training of fellows will involve learning experience "Derived from" or "Targeted to" the needs of the community. It shall therefore be necessary to expose the students to community based activities.

Throughout the course of training the emphasis shall be on acquiring knowledge, skill and attitudes through first hand experiences as far as possible. The emphasis will be on self learning rather than on didactic lectures. **The entire period shall be 'in service' training program based on the concept of 'learn as you work' principle.**

5.2. Training program:

Duration of Course – one year

The posting of the candidates is as follows.

- Geriatric Medicine : 6 months
- General Medicine : 2 months

Specialty postings – 4 months

Cardiology, Neurology, Psychiatry, Rehabilitation, Nephrology, Gastroenterology, Haematology, Dermatology, Intensive Medical Care Unit, Thoracic Medicine, Rheumatology, Medical Oncology & diabetology.

5.3 Presentations:

In addition to attending all the academic sessions, the candidate needs to make a minimum number of presentations in these academic sessions during the training period of 1 year

	Frequency #
Presentations	
a. Seminars / Symposia	1 per month
b. Journal club	1 per month
c. Clinical case conference	1 per month
d. Research conference at state level - 1	
e. Research conference at national level - 1	
f. Bedside presentation	1 per month
g. Interdepartmental meeting	1 per month
h. Grand rounds	1 per week
i. Mortality meeting and audit meeting	1 per month
j. Record meetings	Once in 2 weeks
k. Teaching learning process will also take place during the daily ward rounds and during teaching rounds	
# May be increased if required.	

5.4. Log book

The fellows shall maintain a Record Book (Log Book) of the work carried out by them on day to day basis & training program undergone during the period of training including details of procedures carried out independently or assisted by the candidate. The log book will be checked by the faculty members imparting the training. Candidates will be required to produce log book duly certified by the guide at the time of practical examination.

5.5. Development of attitude:

It is a very important aspect of management of elderly and aged. It would be the constant endeavor of the faculty to develop desirable attitudes in the PG trainees during the course by personal examples, interaction and group discussion. Constant watch will be maintained during their work in the wards to ensure that this objective is being met. Although there will be no formal evaluation of attitude, some aspects of this domain would be covered during the formative evaluation for continued internal assessment.

6. Text books and reference books:

Sl.No	Name of the Book	Author
1.	Brocklehurst's Textbook of Geriatric Medicine and Gerontology, 5e	R.C.Tallis, H.M.Fillit, J.C.Brocklehurst
2.	Oxford Textbook of Geriatric Medicine Source: Oxford University Press (OUP)	J. Grimley Evans, T. Franklin Williams, B. Lynn Beattie, J-P. Michel, G. K. Wilcock
3.	Merck Manual of Geriatrics 3rd edition, 2011 - 1507 pp	Mark H. Beers, Robert Berkow
4.	Practice of Geriatrics, 4th ed.	Duthie, Edmond - Saunders
5	Essentials of Clinical Geriatrics: Sixth Edition	Robert Kane, Joseph uslander, Itamar Abrass, Barbara Resnick
6	Geriatric Medicine – Fourth Edition	Christine K. Cassel
7	Fundamentals of Geriatric Pharmacotherapy: An Evidence-Based Approach	Lisa C. Hutchison, Rebecca B. Sleeper
8	Brocklehurst's textbook of Geriatric Medicine and Gerontology	Fillit, Howard
9	ABC of Geriatric Medicine	N.Cooper, K.Forrest, G.Mully
10	Practical Guide to the Care of the Geriatric Patient	Wachtel, Tom
11	Primary Care Geriatrics	Ham, Richard
12	Sleep Disorders Medicine: Basic Science, Technical Considerations, and Clinical Aspects	Chokroverty
13	Handbook of Assessment in Clinical Gerontology	Peter A. Lichtenberg.
14	Handbook of the Neuroscience of Aging	Hof & Mobbs
15	Complementary and Alternative Therapies and the Aging Population, An Evidence-Based Approach	Ronald Ross Watson
16	Handbook of Models for Human Aging	P.Michael Conn
17	Sleep and Aging	Mattson
18	Recent advances in Psychology and Aging	Costa & Siegler
19	Caloric Restriction: A Key to Understanding and Modulating Aging	Masoro

20	Mechanisms of Cardiovascular Aging,	Hagen
21	Membrane Lipid Signaling in Aging and Age-Related Disease,	Mattson
22	Energy Metabolism and Lifespan Determination,	Mattson
23	Evidence-Based Counseling and Psychotherapy for an Aging Population	Glicken
24	Basic Biology and Clinical Impact of Immunosenescence,	Pawelec
25	Alzheimer Disease: The Changing View, The Changing View	Katzman & Bick
26	The Osteoporotic Syndrome, Detection, Prevention, and Treatment, 4thEdition	Avioli
27	Handbook of the Aging Brain,	Wang & Snyder

7. List of Journals (Previous three years):

Sl.No	List of Journals
1.	The Gerontologist
2.	Ageing Research Reviews
3.	Archives of Gerontology and Geriatrics
4.	Clinics in Geriatric Medicine
5.	Journal of Aging Studies
6.	Neurobiology of Aging
7.	Journal of the American Geriatrics Society
8.	Sleep Medicine Clinics
9.	Geriatric Clinics <i>zob.</i> Clinics In Geriatric Medicine (Philadelphia PA)
10.	Geriatric Nephrology and Urology (Dordrecht) Geriatr Nephrol Urol
11.	Geriatric Psychiatry <i>zob.</i> International Journal of Geriatric Psychiatry (Chichester)
12.	* Geriatrics (Duluth MN) Geriatrics
13.	Geriatrics for the Primary Care Physician <i>zob.</i> Geriatrics (Duluth MN)
14.	Gerontologist (Washington DC) Gerontologist
15.	Gerontology (Basel) Gerontology