INTRODUCTION

The geriatric medicine fellowship is initiated in response to the growing need for academically trained geriatricians in India. The mission of Geriatric Medicine. Fellowship is to educate physicians to provide elderly patients with the best possible care using expertise in clinical skills and an excellent fund of knowledge based on current clinical and basic science research. The geriatric medicine fellowship is based in the geriatrics section of the Department of Internal Medicine. The program encompasses acute, ambulatory, community, and long term care experiences.

Krishna Institute Of Medical Sciences has a modern, well-equipped and sophisticated medical intensive care unit (MICU) and coronary care unit (CCU). The intensive care unit has a capacity of 20 beds. There is a Medicine Department which has about 85,000 OPD attendance and 8000 indoor admissions per year. MICU has the capacity to ventilate patients with invasive ventilation and monitoring with support of experienced medical and nursing staff. In addition, there is facility to provide dialysis for renal failure patients. Bio Medical Engineer is available round the clock for the trouble free and smooth functioning of the life support equipment. MICU provides IV fluid administration with infusion pumps and syringe pumps, hence accurate volume delivery is ensured. There are multiple multi channel vital sign monitors, which are capable of measuring blood pressure both invasively and non-invasively with ETCO\textsubscript{2} monitoring facility. Every patient requiring continuous pulse oximetry has its own dedicated pulse oximeter. Cardiac Echo, ECG and EEG services are also available. There is availability of portable x-ray and ultrasonography round the clock and hospital has 24-hour laboratory support for urgent investigations including blood gas analysis. CT and MRI Scan are available in close by facilities.

MICU Staff:

The unit is staffed with well trained and experienced fulltime Consultants. Parents have a chance to interact with one of them on a regular basis. MICU is also staffed with well trained and experienced nurses.
PROGRAM OVERVIEW

Competency-based Learning Goals and Objectives for Geriatric Medicine Fellows

The overall goals and objectives for geriatric medicine fellows are to gain extensive experience in the diagnosis and ongoing management of elderly patients with multiple medical problems across a variety of health care settings.

One Year Clinical fellowship

Goals and objectives have been established for the geriatric medicine fellows. These are primarily aimed at gaining experience in the daily management and provision of continuity care to elderly patients, paying particular attention to their functional status and cognitive ability. In general the expectations of fellows include demonstration of medical knowledge, comprehension of pathophysiology, development of differential diagnoses, formulation of management plans, and dissemination of plan of care by presentations in various clinical settings and at clinical conferences. The care and management of geriatric patients will be specifically addressed in inpatient, ambulatory, house call and long term care settings. The fellows are also active members of interdisciplinary teams and teach internal residents and medical students.

Medical Knowledge

Proficiency in this competency includes knowledge of biomedical, clinical, and epidemiological domains. Individual fellows will be taught and evaluated based on their ability to acquire and access new knowledge, interpretation of information and then how to apply this information to clinical settings specifically the individual patient.

- Knowledge of Geriatric Medicine, including but not limited to cognitive impairment, depression, falls, incontinence, osteoporosis, sensory impairment, pressure ulcers, sleep disorders, pain, elder abuse/neglect, malnutrition, polypharmacy, health maintenance, and functional impairment.
- Knowledge of diseases that are particularly prevalent in older patients and may have different clinical presentations including but not limited to neoplastic, cardiovascular, neurologic, musculoskeletal, metabolic, infectious diseases.
- Knowledge of pharmacologic issues and aging, including polypharmacy, side effects, drug interactions, adherence, costs, and changes in pharmacokinetics and...
pharmacodynamics in older patients

- Knowledge of geriatric principles of rehabilitation, the optimal use of physical occupational, and speech therapy, exercise, functional activities, assisted devices, environmental modification and various intensities of rehabilitation.
- Knowledge of perioperative assessment and management.
- Knowledge of the pivotal role of formal and informal caregivers, families and the formal community support systems available.
- Knowledge of long term care, including palliative care, knowledge of the administration, regulation and financing of long-term institutions and the continuum of safe and timely transitions across care settings.
- Knowledge of home care, including components of home visits, and appropriate community services
- Knowledge of hospice including pain management, symptom relief, comfort care and end-of-life decisions
- Knowledge of cultural aspects of aging, including demographics, health care status, diverse ethnicities, access to health care
- Knowledge of iatrogenic disorders and their prevention

**Interpersonal and Communication Skills**

Fellows are expected to

- Communicate effectively with patients, families and the public from diverse socioeconomic and cultural backgrounds
- Communicate effectively with physicians, interdisciplinary team members and health related agencies
- Work effectively as a member or a leader of a health care team
- Act in a consultative role to other physicians and health professionals

**Practice-based Learning and Improvement**

Fellows are expected to

- Identify strengths, deficiencies, and limits of personal knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Systematically analyze practice using quality improvement methods, and implement
changes with the goal of practice improvement

- Incorporate formative evaluation feedback into daily practice
- Locate, appraise, and assimilate evidence from scientific studies related to patients’ health concerns
- Use information technology to optimize learning
- Participate in the education of patients, families, students, residents and other health professionals.

**Academic activities**

**Courses handled**

Fellowship program in Geriatrics

**Intake**

Fellow Geriatrics - 2 per year

**Eligibility**

Should have acquired MBBS Degree from a M.C.I. recognized University.

**Course duration**

1 years

**Selection procedure**

Through Entrance Examinations and Counseling

**Academic Curriculum**

- 3 Months-Internal Medicine
- 3 Months-Specialty
- 6 Months-Geriatric Medicines
Topics covered may include general internal medicine as encountered in the practice of Geriatric Medicine.
The content areas are as follows:
- Gerontology
- Diseases in the Elderly
- Geriatric Psychiatry
- Geriatric Syndromes
- Geropharmacology
- Functional Assessment and Rehabilitation
- Caring for the Elderly

**Gerontology**
Biology
Physiology
Demography and epidemiology
Psychology/sociology of aging
Other

**Diseases in the Elderly**

**Allergy**
Anaphylaxis
Allergic rhinitis
Ocular
Other

**Cardiovascular**
Rhythm disturbances
Heart Failure
Cor pulmonale
Pericardial diseases
Atherosclerosis
Hypertension
Orthostatic hypotension
Peripheral vascular disease
Syncope
Other
Dermatology
Environmental etiology
Infections
Seborrheic Dermatitis
Psoriasis
Blistering Diseases
Pruritus
Benign skin tumors
Acne Rosacea
Onychomycosis
Other

Endocrinology
Diabetes
The Metabolic Syndrome
Adrenal disorders
Thyroid disorders
Disorders of calcium metabolism
Osteomalecia
Other

Gastroenterology
Esophagus
UGI bleed
Stomach and duodenum
Liver
Biliary disease
Pancreas
Inflammatory bowel disease
Sprue
Lower GI bleed
Colonic disease
Other

Genitourinary
Male genitourinary disorders
Gynecology
**Hematology**
- Decreased blood cell counts
- Chronic disease
- Erythropoietin deficiency
- B12 deficiency
- Folate deficiency
- Hemolytic
- Hemoglobinopathies
- Myelodysplastic syndromes
- Other

**Infectious Diseases**
- Atypical presentations
- Fever of unknown origin
- Respiratory infections
- Genitourinary
- Syphilis
- HIV
- Intrabdominal
- Neurologic
- Bones and joints
- Tetanus
- Bacteremia/Sepsis
- Drug-resistant/emergent infections
- Other

**Nephrology**
- Hyponatremia
- Hypernatremia
- Acute renal failure
- Chronic kidney disease
- Glomerular disorders
- Renovascular disease
- Tubulointerstitial nephritis
- Acid-base disorders
- Other
Neurology
Stroke and Transient Ischemic Attack
Seizures
Movement disorders
Muscle disorders
Neuropathies
Headaches
Aphasias
Myelopathies
Motor neuron disorders
Other
Oncology
Paraneoplastic syndromes
Specific tumors (prevalence, diagnosis, treatment, complications)
General treatment
Oral Health
Dental caries
Periodontal diseases
Candidiasis
Xerostomia
Salivary glands
Temporomandibular joint
Leukoplakia
Dentures
Nutritional deficiencies and oral health
Other
Pulmonary Disease
Asthma and bronchospasm
Chronic obstructive pulmonary disease
Interstitial lung diseases
Primary pulmonary hypertension
Pulmonary thromboembolism
Pleural diseases
Adult respiratory distress syndrome
Acute respiratory failure
Other

**Rheumatology**
Osteoarthritis
Osteoporosis
Musculoskeletal conditions (epidemiology, diagnosis, nonpharmacologic, pharmacologic management)
Crystal deposition disease
Polymyalgia Rheumatica and giant cell arteritis
Rheumatoid arthritis
Sjögren’s syndrome
Systemic lupus erythematosus
Dermatomyositis and polymyositis
Amyloidosis
Paget’s disease
Vasculitis
Lyme disease
Scleroderma
Other

**Geriatric Psychiatry**
Dementia
Depression
Bipolar disorder
Anxiety
Schizophrenia, psychosis, hallucinations
Alcohol and substance abuse
Personality disorders and hypochondriasis

**Geriatric Syndromes**
Delirium
Dizziness / lightheadedness
Falls and gait disorders
Sensory loss
Ophthalmology other than vision loss
ENT other than hearing loss
Incontinence
Consequences of immobility
Sleep disorders
Pain
Malnutrition
Frailty

**Geropharmacology**

Age-related changes
Adverse Drug Events (ADE)
Prescribing principles
Drug Interactions
Complementary and alternative medications

**Functional Assessment and Rehabilitation**

Conceptual models of disablement
Assessment of disability
Assessment of rehabilitation potential
Aspects of rehabilitation
Interdisciplinary team
Assistive devices
Adaptive equipment
Therapeutic modalities
Orthotics
Prosthetics
Environmental modifications
Rehabilitation settings
Insurance issues
Rehabilitation of common conditions

**Caring for the Elderly**

Preventive medicine
Economic aspects of health care
Healthcare delivery systems
Ethical principles of care
Caregiver and family concerns
Cultural aspects of aging
End-of-life and palliative-care
Elder mistreatment

Reference books:

<table>
<thead>
<tr>
<th>Sr no.</th>
<th>NAME OF BOOK</th>
<th>AUTHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Geriatric Medicine</td>
<td>Christine K. Cassel</td>
</tr>
<tr>
<td>2</td>
<td>Fundamentals of Geriatric Medicine: A Case-Based Approach</td>
<td>Helen Fernandez</td>
</tr>
<tr>
<td>3</td>
<td>Essentials of Clinical Geriatrics: Sixth Edition</td>
<td>Robert Kane, Joseph Ouslander</td>
</tr>
<tr>
<td>6</td>
<td>Primary Care Geriatrics: A Case-Based Approach</td>
<td>Richard J. Ham</td>
</tr>
<tr>
<td>7</td>
<td>Evidence-Based Geriatric Nursing Protocols for Best Practice: Third Edition (Springer Series on Geriatric Nursing)</td>
<td>Elizabeth Capezuti, DeAnne Zwicker</td>
</tr>
<tr>
<td>8</td>
<td>Hazzard's Geriatric Medicine &amp; Gerontology, Sixth Edition (Principles of Geriatric Medicine &amp; Gerontology)</td>
<td>Jeffrey Halter, Joseph Ouslander, Mary Tinetti and Stephanie Studenski</td>
</tr>
<tr>
<td>9</td>
<td>Principles of Geriatric Medicine and Gerontology</td>
<td>William Hazzard, John Blass, Jeffrey Halter</td>
</tr>
<tr>
<td>10</td>
<td>Current Geriatric Diagnosis and Treatment (LANGE CURRENT Series)</td>
<td>C. Landefeld, Robert Palmer, Mary Anne Johnson and Catherine Johnston</td>
</tr>
<tr>
<td>11</td>
<td>Harrison's Principles of Internal Medicine, 17th Edition</td>
<td>Anthony S. Fauci, Eugene Braunwald, Dennis L. Kasper</td>
</tr>
<tr>
<td>13</td>
<td>Goldman's Cecil Medicine</td>
<td>Lee Goldman , Andrew I. Schafer</td>
</tr>
</tbody>
</table>
University Examination details

The exam is designed to evaluate the extent of the candidate's knowledge and clinical judgment in the areas in which a Geriatrician should demonstrate a high level of competence. Expertise in the broad domain of Geriatric Medicine and the diagnosis and treatment of both common and rare conditions that have important consequences for patients, will be assessed.

Theory Examination

The students sit for the university examination at the end of year and write 3 papers followed by a clinical and viva voce examination as per regulations of the Medical Council of India.

Paper 1 - Internal medicine, including Geriatric Psychiatry

Paper 2 - Geriatric medicine

Paper 3 - Geriatric Medicine, Rehabilitation, Recent advances

Practical Examination

(a) Clinical Patient presentation/discussion:

(i) One long case: The long case will be structured comprising – history taking, clinical examination, investigations, decision making, proposed treatment modalities, ethical justification and personal attributes.

(ii) Two short cases: The short cases will also be structured in which only one particular system may be considered and therapy decision/discussion, made.

(b) Identification of Surgical Pathology, excised specimens & discussion, reading X-rays & CT Scan/MRI, identification of Instruments & discussion, identification of braces & calipers & discussion thereon.

(c) Log book Evaluation.