SCHOOL OF MEDICINE
D.Y. PATIL UNIVERSITY
(established under Section-3 of UGC Act. 1956 vide notification no. F. 9.21/2000. U.3 dated 20.06.2002 of the Govt. of India)

MD GENERAL MEDICINE
3 YEARS FULL TIME PROGRAMME
CURRICULUM
2016-2017 onwards

Sector-7 Dr. D. Y. Patil Vidyanagar, Nerul, Navi Mumbai.
Tel: 91-22 27702218  Email:-schoolofmedicine@dypatil.edu Web:-www.dypatil.edu
PROGRAMME NAME : MD GENERAL MEDICINE

A postgraduate in a general medicine is expected to diagnose and treat common medical illnesses and have a sufficient knowledge of rare diseases, advances and technologies in medicine. He should be able to manage medical emergencies and carry out research and undergraduate medical teaching.

PROGRAMME OBJECTIVES

To achieve the goal following objectives must be fulfilled:

A) COGNITIVE DOMAIN:
   1. Proper history, examination and diagnosis.
   2. Relevant investigations, their interpretation with reasonable accuracy.
   3. Appropriate treatment and early disposal.
   4. Prompt diagnosis and management of emergencies.
   5. Update knowledge
   6. Teach and guide undergraduate (MBBS) students.
   7. Carry out research and publication

B) PSYCHOMOTOR DOMAIN:
   1. To perform diagnostic/ therapeutic procedures like central venous line insertion, lumbar puncture, pleural/ pericardial/ ascites tapping, bone marrow aspiration, liver/ kidney/ pleural biopsy, and interventions such as mechanical ventilation, tube thoracostomy, cardiopulmonary resuscitation, temporary pacing etc.
   2. To be familiar with complication of procedures and be equipped in their management.

C) AFFECTIVE DOMAIN:
   1. Ethical principles during work
   2. Seek and give consultation when required.
   3. Sympathetic behavior with patients and their relatives.
   4. Respects patients’ rights and privileges.
   5. Supplement information about their illness.
   6. Consider seeking second opinion when requested by patients.
   7. Develop communication skills to interact with colleagues, senior and paramedical staff.
   8. To realize that patient management is a team work.
PROGRAMME OUTCOME

At the end of the training the student will be able to Diagnose and treat common medical illnesses and have a sufficient knowledge of rare diseases, advances and technologies in medicine. He will be able to manage medical emergencies and carry out research and undergraduate medical teaching.

PROGRAMME SPECIFIC OUTCOMES

- Diagnose and manage majority of the conditions in General Medicine on the basis of clinical assessment and appropriately selected and conducted investigations
- Arrive working diagnosis after clinical examination. Plan a line of treatment which is need based, cost effective and appropriate for common ailments taking into consideration patient socio economic status.
- Manage common medical emergencies and refer when required,
- Communicate effectively and counsel the patient and family,
- Demonstrate empathy and human approach towards patients and their families and exhibit interpersonal behavior in accordance with society norms and expectations.
- Be familiar with common imaging techniques, their advantages, disadvantages and indications; be aware of radiation hazards and measures to protect therefrom.
- Physicians with the necessary knowledge, skill and attitude to diagnose and manage in a cost effective manner, a wide range of clinical problems in internal medicine as seen in the community or in secondary/tertiary care setting.
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MD GENERAL MEDICINE
### 3rd Year

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- The candidate must secure 50% and above in both Theory and Practical’s to Pass
- Dissertation
- 1 Poster presentation, 1 paper presentation at national/state conference and 1 research paper should be published or accepted for publication/sent for publication during the period of post graduate studies
- The candidate must secure 50% and above in both Theory and Practical’s to Pass
COURSE DESCRIPTION
Duration: 3 years Residency program

SCOPE OF TRAINING
Diseases related to general medicine, relevant radiology techniques, emergency and intensive care management, maintaining records, use of computers and basic research. Patient care in the settings of outdoor, day care, indoor, emergency and intensive/ critical care.

COURSE CONTENTS
1) Knowledge
- Applied basic science knowledge
- Diseases with reference to General Medicine
- Recent advances
- Biostatistics and clinical epidemiology

2) Skills:
- Decision making
- Diagnostic investigation and procedures
- Monitoring seriously ill patients
- Counseling patients and relatives
- Ability to teach undergraduate students
- Ability to carry out research

TEACHING & LEARNING ACTIVITIES
- Ward/OPD patient management
- Long and short topic presentations
- Ward rounds, case presentations and discussions
- Clinico-radiological and clinico-pathological conferences
- Journal conferences
- PG Case presentation clinics
- Research review
- In-house and guest lectures
- Conferences, symposia, seminars and CMEs
- Participations in workshops, updates, conferences
- Teaching undergraduates
- Use and maintenance of biomedical equipments

SYLLABUS
THEORY

CARDIO–VASCULAR SYSTEM

ECG & its interpretation, diagnosis of arrhythmias & their management, ischaemic heart disease, hypertension, rheumatic fever & rheumatic heart disease, congenital heart diseases, heart failure, pericardial diseases, peripheral vascular diseases, deep vein thrombosis, cardiomyopathy, principles of echocardiography & abnormalities in common disorders, pacemakers, nuclear medicine in cardio-vascular disorders, tumors of the heart, aneurysm & dissection of the aorta, thoracic outlet syndrome, cardiac catheterization, cardiac interventions.

RESPIRATORY SYSTEM

Approach to a patient of respiratory system involvement, pulmonary function tests, arterial blood gases, bronchoscopy, imaging studies, pulmonary angiography, therapeutic interventions: pulmonary artery embolisation / video assisted thoracic surgery/ thoracotomy/ mediastinoscopy, diseases of the upper airway including avian influenza, bronchial asthma, occupational lung diseases, pneumoconioses, organic dusts & environmental carcinogens, pneumonia, bronchiectasis, obstructive airways diseases, interstitial lung diseases, diseases of the pleura: effusion/ pneumothorax / empyema/ haemothorax, air pollution, respiratory failure, adult respiratory distress syndrome, severe acute respiratory syndrome (SARS), mechanical ventilation, mediastinal diseases, infections including tuberculosis, tumors, primary and metastatic carcinomas, hypersensitivity pneumonitis, eosinophilic pneumonias, pulmonary hypertension, sleep apnea, pulmonary thromboembolism, lung transplant.

NERVOUS SYSTEM

Investigations: lumbar puncture/ cerebrospinal fluid examination/ electroencephalography/ evoked potentials/ nerve conduction studies/ electro-myography/ imaging studies/ angiography, migraine, seizures/ epilepsy, cerebrovascular diseases, sub-arachnoid haemorrhage, dementia, extra pyramidal disorders, Parkinson’s disease, motor neurone disease, disorders of cranial nerves, meniers syndrome, benign positional vertigo, diseases of the spinal cord, cranio-vertebral anomalies, tumors of the nervous system, demyelinating diseases, meningitis, infections of nervous system, nutritional and metabolic disorders, central pontine myelinolysis, Wernicke’s encephalopathy, alcoholic cerebral degeneration, pellagra, subacute combined degeneration, polyneuropathies, acute and chronic inflammatory demyelinating polyneuropathies, diabetic neuropathies, mononeuritis multiplex, mononeuropathy, leprosy, neuromuscular junction disorders including myasthenia gravis, myopathies (hereditary/ endocrine/ metabolic/ thyroid diseases/ parathyroid diseases/ diabetes mellitus), periodic paralysis, approach to a patient paralysis, dizziness & vertigo, diplopia, syncope and transient loss of consciousness, involuntary movements, delerium, ataxia, parasthesias& sensory loss, unconsciousness, bowel &
bladder abnormalities, progressive supranuclear palsy, dystonia, spinocerebeller ataxia, drug induced movement disorders, inherited ataxia, traumatic injuries, subdural & epidural hematoma, radiation & chemotherapy in treatment of nervous system tumours, subdural empyema, progressive multifocal leucoencephalopathy, subacute sclerosing pan encephalitis, progressive rubella, panencephalitis, kuru, molecular treatment of neurological disorders, disorders of the autonomic nervous system, details of traumatic injuries to skull & spine, hereditary & metabolic disorders of late onset, mitochondrial myopathies, lipid storage disorders.

INFECTION DISEASES


HEPATO-BILIARY SYSTEM

Liver function tests, jaundice, hepatitis, cirrhosis of liver, portal hypertension, hepatic encephalopathy, hematemesis, amoebic hepatitis, granulomatous hepatitis, hydatid cyst, primary and metastic carcinomas, liver transplant, gall bladder diseases: cholelithiasis/ cholecystitis/ diseases of bile-duct/ cholangiocarcinoma.

GASTROINTESTENAL TRACT

Peptic ulcer disease, gastrointestinal bleeding, gastritis, endoscopy, radiological procedures, infections, inflammatory bowel disease, functional gut disorders, motility disorders, malabsorption syndromes, pancreatitis, cystic fibrosis, malignancy.
KIDNEY

Renal failure, renal replacement therapies, hematuria, proteinuria, polyuria, oliguria, anuria, contrast nephropathy, urinary tract infections, glomerulonephritis, nephrotic syndromes, tubulo-interstitial diseases, kidney in systemic diseases, tumours of the urinary tract, renal calculous disease, barter’s syndrome, fabry’s disease, malignancy.

HAEMATOLOGY

I. Red cell disorders

Approach to a patient with anemia, nutritional, iron deficiency, aplastic, megaloblastic, haemolytic anemia, (special emphasis on thalassemia & sickle cell anemia), hereditary spherocytosis, anemia of chronic disease, autoimmune hemolytic anemia, paroxysmal nocturnal hemoglobinuria, myelodysplastic syndromes, iron overload, and sideroblasticanemias.

II. White cell disorders

Eosinophilia, febrile neutropenia, approach to a patient with splenomegaly & lymphadenopathy, lymphomas, multiple myeloma & related plasma cell disorders, leukemias, hairy cell leukemia.

III. Bleeding & coagulation disorders

Approach and investigations in patients with bleeding disorders, hemophilia, von willebrand’s disease, immune thrombocytopenic purpura, vascular purpuras, henochschonlein purpura, thrombotic thrombocytopenic purpura, disseminated intravascular coagulation, anticoagulant and anti-platelet therapy.

IV. Miscellaneous

Approach to a patient with thrombosis, blood groups, transfusion related diseases, blood transfusion reactions, blood component therapy, hematological manifestations of systemic diseases, drug induced hematological disorders, hypersplenism, chemotherapy, bone narrow transplantation, thrombophilias, platelet function disorders, estimation of hemoglobin/ total and differential white cell count/ erythrocyte sedimentation rate, preparation and staining of blood smears
ENDOCRINE

I. Disorders of glucose metabolism
   Glucose metabolism, physiology of insulin & glucagon secretion, glucose tolerance test, diabetes mellitus, insulin preparations, hypoglycemia, glycosuria of causes other than diabetes mellitus, glucagon secreting tumors.

II. Thyroid gland & its disorders
   Iodine metabolism, anatomy & physiology of thyroid gland, thyroid function tests, goiter, hypothyroidism and hyperthyroidism, myxedema, cretinism, thyroid carcinoma, other rare syndromes of thyroid dysfunction.

III. Disorders of anterior pituitary
   Anatomy & physiology of various hormones & their regulation, acromegaly, gigantism, sheehan’s syndrome.

IV. Disorders of posterior pituitary
   Anatomy and physiology, diabetes insipidus, syndrome of inappropriate anti-diuretic hormone (SIADH) secretion, obesity.

V. Disorders of adrenal cortex
   Regulation of secretion of glucocorticoids, mineralocorticoids & adrenal sex hormones, adrenal insufficiency, Cushing’s syndrome, pheochromocytoma.

VI. Miscellaneous
   Dwarfism, Frohlich’s syndrome, Lawrence Moon Biedel syndrome, anorexia nervosa & bulimia, hypothalamus in health & disease, Conn’s disease, gynaecomastia, non-puerperal galactorrhoea, multiple endocrine neoplasia syndromes, hirsutism, adreno-genital.

GERIATRIC MEDICINE

Theories of ageing, demographic patterns (world / Asia / India) and their significance to health care system, physiological changes in the elderly, diseases in elderly, pharmacotherapy in the elderly, rehabilitation, physiotherapy, occupational therapy, psychotherapy, legal aspects (elderly abuse), psychiatric illnesses in elderly population, geriatric assessment, geriatric emergencies.

GRANULOMATOUS DISEASES

Tuberculosis, leprosy, syphilis, sarcoidosis, Wegener’s granulomatosis, histoplasmosis, coccidiodomycosis, mucocutaneousleishmeniasis, midline granuloma, lymphomatous granuloma, pseudotumor of the orbit.
RHEUMATOLOGY

Pathophysiology of inflammation, autoantibody relevance in disease processes, rheumatoid arthritis including extra-articular manifestations, glucocorticoid therapy in connective tissue diseases, systemic lupus erythematosus (SLE), organ targeted therapy, vasculitides, ankylosing spondylitis, reactive arthritis, undifferentiated spondyloarthropathy, polyarteritis nodosa, Wegener’s granulomatosis, Churg Strauss disease, Takayasu’s arteritis, cutaneous vasculitis, imaging techniques in systemic vasculitis, approach to acute and chronic monoarthritis & polyarthritis, diagnostic imaging in joint disease, crystal arthropathies, gout, infectious arthritis, infections in patients with connective tissue diseases, anti-phospholipid antibody syndrome (APLA), drug induced rheumatic diseases, scleroderma, sarcoidosis, fibromyaligias, haemophilic arthropathy, dermatomyositis, polymyositis, overlap syndromes, sjogrens syndrome, calcium oxalate deposition disease, psoriatic arthritis, neuropathic joint disease, osteoarthritis.

FLUID & ELECTROLYTE

Choice of intravenous fluids, plasma expanders, potassium / calcium / sodium / magnesium / phosphate disorders, acid base balance and disorders.

CRITICAL CARE

Cardio-pulmonary resuscitation, non-invasive and invasive cardiovascular monitoring, circulatory failure, heart failure, acute myocardial infarction, pulmonary embolism, respiratory failure, pulmonary aspiration, nosocomial pneumonia, mechanical ventilation, toxicology, renal failure, status epilepticus, Guillian Barre syndrome, myaesthenia, use of blood products, intravenous immunoglobulins, plasmapheresis, hyperthermia, hypothermia, diabetic ketoacidosis, addisonian crisis, myxedema coma, endotrachial intubation, pacemakers, strokes, subarachnoid haemorrhage, near-drowning, circulatory and ventilatory support in adult respiratory distress syndrome (ARDS), asthma, obstructive airways disease, renal replacement therapy.

DISORDERS BONE & MINERAL METABOLISM

Calcium and phosphorous homeostasis, parathroid gland disorders, vitamin-D in health & disease, metabolic bone disease, osteoprosis, osteomalacia, endocrine hormonal influences on bone metabolism, phosphorus metabolism, hypophosphatemia, hyperphosphatemia, disorders of magnesium metabolism, Paget’s disease of bone, osteomyelitis, bone dysplasias, osteoarthritis, spondylosis, bone in systemic diseases.

IMMUNOLOGY
Normal immune system and its functions, hypersensitivity reactions, T-cell mediated diseases, mechanism of tissue damage, cytokine mediated injury, cytokine inhibitors, interaction of T and B cells, complement system, apoptosis, immunotherapy, immunomodulators, immunosuppressive agents, monoclonal antibodies, stem cell transplant in immune disorders, HLA system, primary immune deficiency diseases, amyloidosis, disorders of immediate type hypersensitivity, biological response modifiers, immunologically mediated skin disorders

POISONINGS

Diagnosis and management of specific and unknown poisonings, universal & specific antidotes, acids and alkalis, kerosene, petroleum products, organophosphates and carbamates, household disinfectants, mosquito repellants, aluminium phosphide, zinc phosphide, yellow phosphorus, heavy metals, paracetamol, barbiturates, snake and scorpion bites, botulism, drug over-dosages, international classification of poisonous chemicals, environmental hazards and poisonings, industrial toxicology, toxidromes, nuclear, biological, chemical warfarin

PREGNANCY MEDICINE


RADIOLOGY

Roengenograms of chest/ abdomen/ spine/ skull/ paranasal sinuses/ bones and joints, computerized tomography (CT) and magnetic resonance (MR) imagings, angiography, digital subtraction angiography, imaging techniques for hepatobiliary system, barium studies, intravenous urography, scintigraphy, radionuclide imaging of kidney/ bone/ heart/ liver/ lung/ gall bladder/ thyroid/ parathyroid/ whole body, echocardiography, ventriculography, positron emission tomography (PET) scan, lymphangiography, cardiac catheterization, ultrasound, color doppler, developing and newer imaging techniques.
ETHICAL & LEGAL ISSUES IN MEDICINE

Importance and procedures of informed consent, emergency &life saving intervention & treatment, information to be given to patient & relatives, rights of patients including confidentiality, withdrawing life support systems, organ transplant from cadaver, euthanasia, consumers protection act, clinical decisions for a patient who lacks decision of signing of will, ethics committee & its role in medical research, procedures (medicolegal) followed in cases of poisoning, suspected rape, adverse reaction to drugs and interventions, absconded patients, in-hospital injuries and suicide, treatment of pregnant patients with drug and interventions likely to cause fetal harm, cloning, stem cells usage and preservation, crimes performed by addicts

- Newer therapy in leptospirosis
- Zika virus
- Role of bronchoscopy in lung parenchymal disease
- Interventions in pulmonary
- Hepatitis C- Changes in management
- Surgery in Parkinson’s disease & epilepsy
- Haemophilia – newer therapies
- Renovascular Hypertension with treatment of Isolated Systolic Hypertension
- Newer biomarkers in heart failure
- Pulmonary artery Hypertension - Newer theory
- New Insulins
- Musculoskeletal involvement in Diabetes Mellitus
- Gut – microflora
- Newer motilities in diagnosis of tuberculosis
- Adult immunisation
- Ebola virus
- Biomarkers in Sepsis
- Medical ethics – Theories
- Geriatric teaching
- Human endothelial progenitor cells
PRACTICAL

- History, examination and writing of records:
  - History taking should include the background information, presenting complaints and history of present illness, history of previous illness, family history, social and occupational history and treatment history.
  - Detailed physical examination should include general examination and systemic examination (Chest, Cardio-vascular system, Abdomen, Central nervous system, locomotor system and joints).
  - Skills in writing up notes, maintaining problem-oriented records, progress notes, and presentation of cases during ward rounds, planning investigations and making treatment plans should be taught.

- Bedside procedures & Investigations:
  - Therapeutics skills: Venepuncture and establishment of vascular access, Administration of fluids, blood, blood components and parenteral nutrition, Nasogastric feeding, Urethral catheterization, Administration of oxygen, Cardiopulmonary resuscitation, Endotracheal intubation, Intrathecal administration of drugs, Common dressings, Abscess drainage.
  - Investigative skills: Venous blood sampling, Arterial blood sampling, Lumbar puncture, Bone marrow aspiration, Pleural, Peritoneal & Pericardial tap, Biopsy of liver and kidney.
  - Bedside investigations: Hemoglobin, TLC, DLC, ESR, Peripheral smear staining and examination, Urine: Routine and microscopic examination, Stool microscopy including hanging drop preparation, Examination of CSF, Pleural fluid and Peritoneal fluid, Gram staining, ZN staining, etc.

CLINICAL TEACHING IN ALLIED POSTING

Teaching and Training Programme In Cardiology

A junior Resident, while rotating in the subspecialty of cardiology, undergoes the following clinical/other teaching exercises and acquires knowledge of following procedures/investigations:

Clinical

Clinical work of a resident is closely guided and supervised by the Senior Resident and the consultants.

Ward: Duties include diagnostic case work up and day-to-day management of cases (rheumatic heart disease, ischemic heart disease (IHD), hypertension, congestive heart failure, congenital heart disease etc.)

A resident acquires the expertise/knowledge to diagnose and manage acute myocardial infection and its complications, common arrhythmias, cardiogenic shock and pericardial...
temponade etc. The resident also learn to perform the procedures and investigations (listed below) necessary to manage such patients in appropriate clinical setting.

**OPD:** Work up and management of common OPD cases (Rheumatic heart disease, ischemic heart disease, congestive heart failure, hypertension etc.)

**Procedures**

The junior residents are trained to carry out the following common procedures during their cardiology posting:

- Pericardiocentesis
- Cardioversion
- Defibrillation
- Intensive haemodynamic monitoring (including CVP and arterial line, Swan Ganzcatheterisation). Temporary pacemaker insertion

**Investigations**

During their cardiology posting the Junior Resident is guided and helped in acquiring theoretical and practical knowledge about the following investigations and their interpretation and applications to the various clinical situations:

- Electrocardiogram
- TMT
- Holter monitoring
- Head-up tilt Test
- Nuclear cardiology (Technetium, Thallium scans, multigated acquisition * (MUGA) etc).
- Cardiac catheterisation and Electro-physiological studies

**TEACHNIG AND TRAINING PROGRAMME IN NEPHROLOGY**

A Junior Resident, while posted in the subspecialty of Nephrology, undergoes the following clinical/other teaching exercises

**Clinical**

Clinical work of a resident is closely guided and supervised by the Senior Residents and consultants.

(a) Ward: A Junior Resident is trained for carrying out diagnostic case work up and day-to-day management of the following cases: RPGN (rapidly progressive glomerulonephritis), ARF, CRF, Renal carcinoma, Obstructive uropathy, congenital renal disorders, Renal calculus disease, Systemic diseases with renal maladies.
involvement, urinary-tract infection, hypertension, renal transplant management, renal tubulardisorders.

Teaching

(a) Theoretical and practical aspects of peritoneal and haemodialysis.
(b) Fluid and electrolyte management with aspecialreferene to renal status.

Procedures

At the end of the posting in Nephrology, the Junior Resident should have acquired the knowledge of and should be able to carry out the following procedures:

- Renal biopsy
- Peritoneal dialysis

Investigations

By the end of the Nephrology posting the Junior Resident should have practical and theoretical knowledge of following investigations:

- Urine examination - essential
- Serum and urine osmotality
- Glomerular and renal function test studies.
- Renal dynamic screening and imaging (esp. renal ultrasound).
- Immunological tests related to renal diseases
- Cyclosporin immuno-assay
- Interpretation of renal biopsy of common renal disease (e.g. Chronic)
- Glomerulonephritis, chronic pyelonephritis etc.

TEACHING AND TRAINING PROGRAMME IN EMERGENCY SERVICES

A Junior Resident, while rotating through Casualty, undergoes the following clinical/other teachingexercises and acquires knowledge of following procedures/investigations:

Clinical

Clinical work of a resident is closely guided and supervised by the Senior Residents and the consultants.
At the end of the Casualty posting the Junior Resident should be able to diagnose and manage the following medical problems in the casualty.
Acute myocardial infection, arrhythmias including complete heart block and ventricular tachycardia, cardiogenic asthma and COAD, lobar pneumonia, pneumothorax, massive
pleural effusion, pulmonary thromboembolism, peritonitis, diabetic ketoacidosis, myxoedema coma, thyroid crisis, acute renal failure, dyselectrolaemia, metabolic acidosis, cerebrovascular accidents, epilepsy, meningitis, cerebral malaria, coma, dehydration, diarrhea, septicemia, hypertensive emergencies, common poisonings, drowning, electrical injury etc. Management of common poisonings, Acid - base balance

**Procedures**

At the end of the Casualty posting, Junior Resident should possess theoretical knowledge of, and should be able to perform the following procedures:
- External cardiac massage
- Use of defibrillator
- Emergency IV canula insertion and cutdown
- Emergency ryles tube insertion
- Gastric lavage in case of poisonings
- Thoracocentesis and thoracic tube insertion (in case of pleural effusion and pneumothorax respectively)
- Insertion of foley’s scatheter (both in males and females)
- CVP line insertion
- Assisted ventilation
- Arterial puncture and canulation of internal jugular, and subclavian.
- Use of aerosol nebulisers
- Tracheostomy.

**TEACHING AND TRAINING PROGRAMME IN INTENSIVE CARE UNIT (ICU)**

During their posting in various medical units, the JR will be posted in the ICU. The unit has modem monitoring facilities as well as volume cycled ventilation with all modes. The residents are required to be physically present in the ICU during their hours of posting, including night duties.

During their posting in the ICU, the residents would be expected to acquire the following skills:
- Providing assisted ventilation using correct modes and strategies using modern ventilations.
- Compute various parameters of lung mechanics and gas exchange.
- Insert central venous lines using Triple humen catheters, record haemodynamics invasive methods.
- Make correct decision regarding weaning.
- To look after the nutritional requirements of the patients.
- To prevent various complications including barotrauma.
TEACHING AND TRAINING PROGRAMME IN ENDOCRINOLOGY:

Clinical

Clinical work of a resident is closely guided and supervised by Senior Residents and consultants.

(a) Ward: At the end of the endocrinology posting the junior Resident should be able to do diagnostic case work up the day-to-day management of the following common endocrine disorders: NIDDM and IDDM and their complications, hyperthyroidism and hypothyroidism, Cushing’s syndrome, Addison’s disease, pituitary disorders (growth retardation, panhypopituitarism) hirsutism and virilisation, pubertal disorders, disorders of fertility and sexual potency etc.

Procedures and investigations

At the end of the endocrinology posting the Junior Resident should have practical knowledge and should be able to carry out following:

- Daily glucose monitoring with glucometer
- Photomotograms
- Stimulation tests (insuling hypoglycemia, RHRH/TRH/ACTH tests)
- Suppression tests (dexamethasone suppression tests, GH suppression test)
- Other - Prolonged fasting test, water deprivation test, phosphate excretion test, ammonium chloride acidification test etc.

TEACHING AND TRAINING PROGRAMME IN HEMATOLOGY

Clinical

Clinical work of a resident is closely guided and supervised by consultants. At the end of the hematology posting the junior Resident should be able to do diagnostic case work up the day-to-day management of the following common hematology disorders: All types of anemias, Leukemias, Lymphoma. White blood cell disorders. Platelet disorders and their management. Coagulation and bleeding disorders. Component Therapy

Procedures and investigations

- Bone marrow aspiration and biopsy
- Bone marrow transplant
TEACHING AND TRAINING PROGRAMME IN PULMONARY MEDICINE

Clinical

Clinical work of a resident is closely guided and supervised by consultants. At the end of pulmonary medicine posting the junior Resident should be able to do diagnosis of common cases like bronchial asthma, COPD, ILD, Occupational hazardous diseases.

Procedures and investigations

(a) Pleurocentesis       (c) PFT       (e) Sleep studies
(b) Pleural biopsy       (d) ICD

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TEACHING AND TRAINING PROGRAMME IN GASTROENTEROLOGY

Clinical

OPD: AJuniorResidentshouldworkupcommoncasesanddiscusswiththeconsultant.

WARD: AJuniorResidentshouldgaincompetencyindianosticcasework upanddaytodaymanagementofthefollowingcases:

Acute viralhepatitis and its complications, chronic hepatitis, cirrhosis of liver and its complications, management of hepaticencephalopathy, upper and lower gastrointestinal bleed (assessment/monitoring/indications for transfusion), acute abdomen (peritonitis, intestinal obstruction, pancreatitis etc), liver abscess, inflammatory bowel disease, malabsorption, intestinal tuberculosis and its complications, malignant lesions of liver, gallbladder, stomach, pancreas and intestines etc.

Procedures

TheJuniorResidentshouldhaveacquiredpracticalknowledgeof/andshould beabletocarryoutthefollowing:

Perrectalexaminationandproctoscopy.

Nasogastricintubation.

Ascitictap.

Liverbiopsy.
FNAC of abdominal masses (under ultrasound guidance).

Needle aspiration from liver abscess (under ultrasound guidance).

Investigations

The Junior Residents should have acquired theoretical/practical knowledge about the following investigations:

- Interpretation of plain X-ray of the abdomen, barium swallow, barium meal, barium enema, abdominal ultrasound and CT scan of the abdomen.
- Pattern of liver biopsy common diseases (e.g. chronic hepatitis, cirrhosis of the liver etc.).
- Indication for upper GI Endoscopy, Sigmoidoscopy, Colonoscopy, Endoscopic Sclerotherapy and Banding, Enteroscopy.
- ERCP and MRCP - indications and interpretations.
- Capsule Endoscopy - indications and interpretations

TEACHING PROGRAMME

- **General Principals**

  Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented.

  Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

- **Teaching Sessions**

  The teaching methodology consists of bedside discussions, ward rounds, case presentations, clinical grand rounds, statistical meetings, journal club, lectures and seminars. Along with these activities, trainees should take part in inter-departmental meetings, clinicopathological and clinico-radiological meetings that are organized regularly.
Trainees are expected to be fully conversant with the use of computers and be able to use databases like Medline, Pubmed etc.

They should be familiar with the concept of evidence-based medicine and the use of guidelines available for managing various diseases.

**TEACHING SCHEDULE**

Following is the suggested weekly teaching programme in the Department of Medicine:

1. Case Presentation & Discussion  Once a week
2. Seminar  Once every months
3. Journal Club  Once a week
4. Statistical & Mortality Meet  Once a month
5. Clinico–Pathological Meet  Once a month
6. Faculty Lecture Teaching  Once a week
7. Grand Round Presentation  Once a week

(by rotation medical units and subspecialties)

- Each unit should have regular teaching rounds for residents posted in that unit.
- The rounds should include bedside case discussions, file rounds (documentation of case history and examination, progress notes, rounds discussions, investigations and management plan), interesting and difficult case unit discussions.
- Central hospital teaching sessions should be conducted regularly and junior residents should present interesting cases, seminars and take part in clinicopathological case discussions.
POSTING

(Broadly conceived):

1) First Year Residency:
   - Outpatients/inpatients care
   - Managing medical emergencies
   - Learning diagnostic/ therapeutic procedures and interventions
   - Interpreting Reports
   - Starting Dissertation
   - Use of computers in medicine

2) Second Year Residency:
   - Outpatients/inpatients care
   - Rotation (six months to one year) in existing allied specialties
   - such as Cardiology, Neurology, Endocrinology, Hematology,
   - Nephrology and MICU.
   - Conducting medical procedures independently.
   - Continuation of dissertation work.

3) Third Year Residency:
   - Out-patients and in-patients care
   - Independent management of emergencies
   - Teaching junior Residents / under-graduate students enrolled in
   - the subject
   - Finalisation and submission of dissertation

ASSESSMENT

All the PG residents should be assessed daily as well as periodically.

GENERAL PRINCIPLES:

- The assessment should be valid, objective, and reliable.
- It should cover cognitive, psychomotor and affective domains.
- Formative and summative (final) assessment should be conducted in theory as well as practicals / clinicals. In addition, the thesis should be assessed separately.

FORMATIVE ASSESSMENT

- The formative assessment is continuous as well as end of term.
- The former is based on the feedback from the consultants concerned.
- Formative assessment will provide feedback to the candidate about his/her performance and help to improve in the areas they lack.
Record of internal assessment should be presented to the board of examiners for consideration at the time of final examination.

INTERNAL ASSESSMENT

- The performance of the Postgraduate student during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student. Marks should be allotted out of 100 as follows.

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Items</th>
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<tbody>
<tr>
<td>1.</td>
<td>Personal Attributes</td>
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<td>2.</td>
<td>Clinical Work</td>
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<td>3.</td>
<td>Academic Activities</td>
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<td>4.</td>
<td>End of 1st year residency theory examination - Paper I</td>
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<tr>
<td>5.</td>
<td>End of 2nd year residency theory Paper II &amp; III &amp; practical examination</td>
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<td>6.</td>
<td>Preliminary Examination Theory &amp; Practical</td>
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1. Personal attributes:

- **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.

- **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.

- **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyalty to the institution.

- **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communications skills.

2. Clinical Work:

- **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.

- **Diligence:** Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical casework and management.

- **Academic ability:** Intelligent, shows sound knowledge and skills, participates
adequately in academic activities, and performs well in oral presentation and departmental tests.

**Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD workup. Preparing documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management). Skill of performing bedside procedures and handling emergencies.

3. **Academic Activity:** Performance during presentations at Journal club/Seminar/Casediscussion/Statmeeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

4. **End of first year residency examination:** Conducted at the end of the first year residency Paper I

5. **End of second year Residency examinations:** Theory Paper II & III and Practical Examination.

6. **Prelim Examination:** Theory & Practical Exam after 2 years 9 months.

A. **THEORY EXAMINATION (Total = 400 Marks)**

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Name of the Paper</th>
<th>Marks</th>
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<tbody>
<tr>
<td>Paper1</td>
<td>Basic Sciences, Infections and Immunology In General Medicine</td>
<td>100</td>
</tr>
<tr>
<td>Paper2</td>
<td>Cardiovascular system, Respiratory Medicine, Nephrology, Rheumatology, Dermatology</td>
<td>100</td>
</tr>
<tr>
<td>Paper3</td>
<td>Endocrinology, Gastroenterology, Hepatobiliary Medicine, Neurology, Hemato-Oncology, Psychiatry</td>
<td>100</td>
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<tr>
<td>Paper4</td>
<td>Recent advances in General Medicine</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>400</strong></td>
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</tbody>
</table>
Theory Paper Pattern

- Question 1 LAQ (20 Marks)
- Question 2 LAQ (20 Marks)
- Question 3 Short Answer (Any Six) (60 Marks)

B. PRACTICALEXAMINATION

- Long Case (Neurology) : 100 Marks
- Two Short Cases: 50 Marks each
- Tables: ECG, X-ray, Drugs, Instruments, Emergency : 50 Marks each
- Thesis Viva : 50 Marks

JOBRESPONSIBILITIES

The trainees in internal medicine should be designated as residents. According to year of residency, they should be designated as First/Second/Third year resident.

- Outdoor Patient (OPD) Responsibilities:
  - The working of the residents in the OPD should be fully supervised.
  - They should evaluate each patient and write the observations on the OPD card with date and signature.
  - Investigations should be ordered as and when necessary using prescribed forms.
  - Residents should discuss all the cases with the consultant and formulate a management plan.
  - Patient requiring admission according to resident’s assessment should be shown to the consultant on duty.
  - Patients requiring immediate medical attention should be sent to the casualty services with detail of the clinical problem clearly written on the card.
  - Patient should be clearly explained as to the nature of the illness, the treatment advice and the investigation to be done.
  - Residents should specify the date and time when the patient has to return for follow-up.
In-Patient Responsibilities

Each resident should be responsible and accountable for all the patients admitted under his care. The following are the general guidelines for the functioning of the residents in the ward:

- Detailed workup of the case and casesheet maintenance:
  
  He/she should record a proper history and document the various symptoms. Perform a proper patient examination using standard methodology. He should develop skills to ensure patient comfort/consent for examination. Based on the above evaluation, he/she should be able to formulate a differential diagnosis and prepare a management plan. Should develop skills for recording of medical notes, investigations and be able to properly document the consultant round notes.

- To organize his/her investigations and ensure collection of reports.
- Bedside procedures, for therapeutic or diagnostic purpose.
- Presentation of a precise and comprehensive overview of the patient in clinical rounds of facilitated discussions with senior residents and consultants.
- To evaluate the patient twice daily (and more frequently if necessary) and maintain a progress report in the case file.
- To establish rapport with the patient for communication regarding the nature of illness and further plan management.
- To write instructions about patient's treatment clearly in the instruction book along with time, date, and the bed number with legible signature of the resident.
- All treatment alterations should be done by the residents with the advice of the concerned consultants and senior residents of the unit.

Admission Day

Following guidelines should be observed by the resident during admission day.

- Residents should work up the patient in detail and be ready with the preliminary necessary investigations reports for the evening discussion with the consultant on duty.
- After the evening round, the resident should make changes in the treatment and plan out the investigations for the next day in advance.

Doctor on Duty

- Duty days for each junior resident should be allotted according to the duty roster.
- The resident on duty for the day should know about all sick patients in the wards and relevant problems of all other patients so that he could face an emergency situation effectively.

MD GENERAL MEDICINE
In the morning, a detailed overview (written and verbal) should be given to the next resident on duty. This practice should be rigidly observed.

If a patient is critically ill, discussion about management should be done with the senior resident or consultant at any time.

The doctor on duty should be available in the ward throughout the duty hours.

- **Care of Sick Patients**
  - Care of sick patients in the ward should have precedence over all other routine work for the doctor on duty.
  - Patients in critical condition should be meticulously monitored and records maintained.
  - If patient merits ICU care, then it must be discussed with the senior residents and consultants for transfer to ICU.

- **Resuscitation Skills**

  At the time of joining the residency programme, the resuscitation skills should be demonstrated to the residents and practical training provided at various work stations.

  - Residents should be fully competent in providing basic and advanced cardiac life support.
  - They should be fully aware of all advanced cardiac support algorithms and be aware of the use of common resuscitative drugs and equipment like defibrillators and external cardiac pacemakers.
  - The residents should be able to lead a cardiac arrest management team.

- **Discharge of the Patient**

  - Patients should be informed about his/her discharge one day in advance and discharge card should be prepared.
  - The discharge card should include the salient points in history and examination, complete diagnosis, important management decisions, hospital course, and procedures done during hospital stay and the final advice to the patient.
  - Consultants and senior residents should check the particulars of the discharge card and countersign it.
  - Patients should be brief regarding the date, time and location of OPD for the follow-up visit.

- **In Case of Death**

  - In case it is anticipated that a particular patient is in a serious condition, relatives should be informed about the critical condition of the patient beforehand.
  - Residents should be expected to develop appropriate skills for breaking bad news and bereavements.
  - Follow-up death summary should be written in the file and face sheet notes must be filled up and the sister in charge should be requested to send the body to the mortuary with respect and dignity from where the patient’s relatives can be handed over the body.
- Incase of medicolegal case, death certificate has to be prepared in triplicate and the body handed over to the mortuary and the local police authorities should be informed.
- Autopsy should be attempted for all patients who have died in the hospital especially if the patient died of an undiagnosed illness.

**Bedside Procedures**

The following guidelines should be observed strictly:

- Be aware of the indications and contraindications for the procedure and record it in the case sheet. Rule out contraindications like low platelet count, prolonged Prothrombin time, etc.
- Plan the procedure during routine working hours, unless it is an emergency.
- Explain the procedure with its complications to the patient and his/her relative and obtain written informed consent on a proper form. Perform the procedure under strict aseptic precautions using standard techniques. Emergency tray should be ready during the procedure.
- Make a brief note on the case sheet with the date, time, nature of the procedure and immediate complications, if any.
- Monitor the patient and watch for complications(s).

**Medico-Legal Responsibilities of the Residents**

- All the residents are given education regarding medico-legal responsibilities at the time of admission in the short workshop.
- They must be aware of the formalities and steps involved in making the correct death certificates, mortuary slips, medico-legal entries, requisition for autopsy etc.
- They should be fully aware of the ethical angle of their responsibilities and should learn how to take legally valid consent for different hospital procedures & therapies.
- They should ensure confidentiality at every stage.

**Suggested Books and Journals**

**Core Books**
- Hutchinson’s Clinical Methods
- Harrison’s Principles of Medicine
- Oxford Text Book of Medicine
- Cecil Text Book of Medicine
- APIText Book of Medicine

**Reference Books**
- Braunwald’s Heart Disease
Hurst’sTheHeart
SheilaSherlock’sDiseasesoftheLiverandBiliarysystem
AdamsandVictor’sPrinciplesofNeurology
CroftonandDouglasRespiratoryDiseases
BrennerandRector’sTheKidney
William’sTextBookofEndocrinology
Mandell’sPrinciplesandPracticeofInfectiousDiseases
Kelley’sTextBookofRheumatology
Devita’sPrinciplesandPracticeofOncology
TextBookofCriticalCareMedicine
Shamroth’sAnIntroductiontoElectrocardiography

CoreJournals
- NewEnglandJournalofMedicine
- TheLancet
- AnnalsofInternalMedicine
- JournalofAssociationofPhysiciansofIndia
- MedicalClinicsofNorthAmerica

ReferenceJournals
- Circulation
- Heart
- IndianHeartJournal
- JIMA(JournalofIndianMedicalAssociation)
- JournalofIndianAcademyofClinicalMedicine
- QuarterlyJournalofMedicine
- NationalMedicalJournalofIndia
- CriticalCareMedicine
- DiabetesCare
- Cancer
- Gastroenterology
- NeurologyIndia
- Chest
- AmericanJournalofKidneyDiseases.