MD GENERAL MEDICINE

SYLLABUS

Diseases in General Medicine

Hematology:

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, and anemia of chronicdisease, autoimmune hemolytic anemia, paroxysmal nocturnal hemoglobinuina, myelodysplastic syndromes, iron overload, and sideroblastic anaemias.

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, hypothalmus in health & disease, Conn's disease, gynaecomastia, non-puerperal galactorrhoea, multiple endocrine neoplasia syndromes, hirsutism, adreno-genital syndromes, disorders of sexual differentiation.

Cardio–Vascular System

ECG & it's 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, cardiomyopathies, 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
catheterisation, 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/ electromyography/ 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 mellitis), 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.

Infectious Diseases

Sepsis syndromes, pyrexia of unknown origin, infective endocarditis, acute infectious diarrhoeal diseases & food poisoning, infections of the urinary tract, infections of skin/ muscle/ soft tissues, infections in intravenous drug abusers, hospital acquired infections, infection control in hospital, bacterial infections, specific infections: pneumococcal/ staphyloccal/ tetanus/ streptococcal/ diphtheria/ botulism/ gas gangrene/ meningococcal/ gonococcal/ salmonella/ shigella/ vibrio cholera/ brucella/ plague/ syphilis/ mycobacteria/ leptospira/ mycoplasma/ pseudomonas/ helicobacter pylori, viruses: herpes/ varicella/
ebstein barr virus/ cytomegalo virus/ rabies/ respiratory viruses/ influenza/ measles/ mumps/ rubella/ arboviruses, fungal: candidiasis/ aspergillosis/ mucormycosis, parasites: ameobiasis/ giardiasis/ pneumocystis carinii/ malaria/ leishnianiasis/ cryptosporidium/ microspondium/ isospora/ filariasis/ neurocysticerosis/ worm infestations, tropical diseases, pancreatitis, osteomyelitis, infections due to bites/ scratches/ burns, tularemia, pertussis, bartonellosis, arenaviruses, moraxella, legionella, nocardia, actinomycetes,
borellia, chlamydiae, rickettsia, newer emerging infections: avian influenza, chikungunya, others.HIV/AIDS: Aetiology & pathogenesis, clinical presentations, modes of transmission, universal precautions, opportunistic infections, management and treatment of the disease, opportunistic infections, complications, antiretroviral therapy, prophylaxis: post exposure and of opportunistic infections, recent advances, historical record.

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, nephritic syndromes, tubulo-interstitial diseases, kidney in systemic diseases, tumours of the urinary tract, renal calculous disease, barter's syndrome, fabry's disease, malignancy.

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, coccidoidomycosis, mucocutaneous leishmeniasis, midline granuloma, lymphomatous granuloma, pseudotumor of the orbit.

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 (medico legal) 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.

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 warfare.

Pregnancy Medicine

Maternal & foetal physiology, principles of maternal morbidity & fetal outcome, medical disorders during pregnancy, infections in pregnancy, metabolic disorders, hyponatremia, thyroid disorder, hypertension and eclampsia, renal failure, disseminated intravascular coagulation, diabetes, valvular heart disease, bronchial asthma, cardiomyopathies, jaundice, HIV/AIDS, hypercoagulable state and its sequelae and complications, cortical venous sinus thrombosis in pregnancy, post-partum sepsis, aminotic fluid embolisation, Epilepsy, drugs in pregnancy, poisonings in pregnancy, smoking, alcoholism, surgery and pregnancy, psychiatric diseases in pregnancy, medical disorders and infertility, genetic disorders & genetic counseling, ethical issues in pregnancy (brain death).

Radiology

Roengenograms of chest/ abdomen/ spine/ skull/ paranasal sinuses/ bones and joints, computerized tomography (CT) and magnetic resonance (MR) imagings, angiography, digital substraction 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.

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, Pãget'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.

Rheumatology

Pathophysiology of inflammation, autoantibody revelance in disease processes, rheumatoid arthritis including extra-articular manifestations, glucocorticoid therapy in connective tissue diseases, systemic lupus erythematosis (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, fibromyalgias, 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, endotracheal intubation, pacemakers, strokes, subarachnoid haemorrhage, near-drowning, circulatory and ventilatory support in adult respiratory distress syndrome (ARDS), asthma, obstructive airways disease, renal replacement therapy.

Emergency Medicine

Basic and advanced life support, disaster management, use and maintenance of equipment used in life support, acute sever asthma, status epilepticus, poisonings, heart failure, shock, acute myocardial infarction, angina, arrhythmias, hypertensive emergencies, medical emergencies in pregnancy, gastro-intestinal bleeding, hepatic encephalopathy, acute gastroenteritis, hemoptyses, obstructive airways disease, tension pneumothorax, adult respiratory distress syndrome (ARDS), respiratory failure, corpulmonale, stroke, sub-arachnoid haemorrhage, oliguria/ anuria, coma, pneumonia, meningitis, infections, sepsis syndromes, multi-organ failure, bleeding manifestations,
endocrine emergencies, electric shock, poisonings, snakebite, scorpion stings, anaphylaxis, nuclear/ biological/ chemical exposures, toxidromes, rabies, burns, strangulation, interventions and procedures: mechanical ventilation/ temporary cardiac pacing/ invasive monitoring/ needle and tube thoracostomy/ cricothyrotomy

Structured Training Programme

Total: 36 months

First Year Residency*:* Medicine units [Appendix -1]

a. Outpatients/inpatients care. Appendix -A
b. Managing medical emergencies.
c. Learning diagnostic/ therapeutic procedures and interventions.
d. Interpreting Reports.

e. Starting Thesis
f. Teaching junior Residents / under-graduate students enrolled in the subject.
g. Use of computers in medicine.

Second Year Residency- *:*

No Speciality Duration

1 Nephrology:	1 month
2 Gastroentrology:	1 month
3 Casualty:/ICU	1 month
4 Cardiology:	1 month
5 Neurology:	1 month
6 Psychiatry:	1 month
7 Dermatology:	2 weeks
8 Infectious diseases including ART:	2 weeks
9 Pulmonology:	1 month
10 Optionals	
Radiodiagnosis/Clinicalpathology/Microbiology/Anaesthesiology/Geriatrics/Rheumatology/Endocrinology -	2 months

The posting and training may be arranged from medical unit posting

3. Third Year Residency*:* **Medicine units**

a. Outpatients and in-patients care.
b. Independent management of emergencies.
c. Teaching junior Residents / under-graduate students enrolled in the subject.
d. Finalisation and submission of Thesis

TEACHING AND TRAINING PROGRAMME: Training in medical units

TRAINING PROGRAMME

All candidates joining the Post Graduate training programme shall work as full time residents during the period of training, attending not less than 80% (Eighty percent) of the training during each calendar year, and given full time responsibility, assignments and participation in all facets of the educational process. Every institution undertaking Post Graduate training programme shall set up an Academic cell or a curriculum committee, under the chairmanship of a senior faculty member, which shall work out the details of the training programme and coordinate and monitor the implementation of these training Programmes. The training programmes shall be updated as and when required. The structured training programme shall be written up and strictly followed, to enable the examiners to determine the training undergone by the candidates and the Medical Council of India inspectors to assess the same at the time of inspection. Post Graduate students shall maintain a record (log) book of the work carried out by them and the training programme undergone during the period of training. The record books shall be checked and assessed by the faculty members imparting the training. During the training for MD. to be awarded in Medicine, there shall be proper

training in basic medical sciences related to the disciplines concerned .Emphasis is to be laid on preventive and social aspects and emergency care, facilities for autopsies, biopsies, cytopsies, endoscopic and imaging etc. also be made available for training purposes. The Post Graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns. In service training, with the students being given graded responsibility in the management and treatment of patients entrusted to their care; participation in Seminars, Journal clubs, Group Discussions, Clinical Meetings, Grand rounds, and Clinico - Pathological Conferences; practical training in Diagnosis and medical treatment; training in the Basic Medical Sciences, as well as in allied clinical specialitites.

THESIS

Every candidate shall carry out work on an assigned research project under the guidance of a recognised Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis.

- The topic should be assigned to the student by the end of 3rd. month of enrollment.
- The topic should be communicated to the KUHS through Head of Department and
- Head of Institution by 6th month of enrollment.
- The duration of the study shall be up to 18 months.
- The last date of submission of the completed thesis to the KUHS should be six months prior to the date of commencement of the degree examination.

EVALUATION OF RESIDENTS: -

Evaluation of residents for their knowledge and acquisition of attitudes, skills and competencies is a continuous process throughout their 3-year period of training. Evaluation of certain attributes such as interpersonal relationships, professional responsibility, sensitivity to patient's need for comfort, ethical behavior etc. is closely observed by the teaching faculty during the day-to-day clinical work of the resident. At the end of each clinical posting in each of the medicine units and the subspecialties mentioned above, the residents are assessed in a formal format by the faculty staff of the concerned unit/department.

Recommended Reading Books –

1. Harrison's Principles of Medicine.
2. Oxford Textbook of Medicine.
3. Cecil Textbook of Medicine.
4. Infectious diseases – Christie
5. Critical care medicine – Cretta
6. Diabetes – Joslin Clinic Mannual
7. Neurology – De Jong
8. MMT – Waghington University
9. Goodman – Gillman – Pharmacology.
10. API Text Book of Medicine.
11. Wintrobe's Hematology.
12. Kelly's Textbook of Rheumatology.
13. Brain's Neurology.
14. Crofton and Douglas Respiratory Medicine.
15. Hepatology by Sheila Sherlock.

16. Electrocardiography by Shamroth.
17. Braunwauld's Cardiology.

Journals

1. Lancet.
2. British Medical Journal.
3. Chest.
4. ICMR Bulletin.
5. WHO Bulletin.
6. New England Journal of medicine.
7. Journal of Association of Physicians of India
8. Journal of Postgraduate Medicine.
9. Annals of Internal Medicine.
10. APICON Medicine Update.
11. Medical Clinics of North America.
12. Journal of Applied Medicine.
13. Journal of General Medicine.

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