

Contents

Sl. No.	Items	Page No.
1	Introduction	03
2	Objectives	03
3	Admission Requirements	04
4	Phase A (Core Medical) Training	04
5	Domains of Learning	05
6	Teaching and learning methods	07
7	Record of Training	09
8	Assessments	10
9	Supervision and Training Monitoring	12
10	Curriculum Implementation, Review and Updating	12
11	Syllabus	13

1. Introduction

Medical education is a continuum from Undergraduate through internship to Postgraduate Medical Training, which is further divided into two stages: basic and higher professional training. Universally postgraduate medical training is competency-based and structured. In fact, self-learning aided by Continued Medical Education (CME) programs, should continue throughout the career of a medical practitioner and re-training is desirable whether re-certification is mandatory or not. This should not be construed to mean that doctors are not adequately trained for their job at graduation or on exit from higher professional training, but that Medicine is complex and evolving; therefore, continued update, review and re-education are mandatory in the Medical Profession.

Recently BSMMU has introduced its competency-based Residency Program. Phase A training of the program, which lasts for two years, aims at a broad-based training in General Internal Medicine.

2. Objectives

- To provide a broad experience in General Internal Medicine, including its interrelationship with other disciplines.
- To enhance medical knowledge, clinical skills, and competence in bedside diagnostic and therapeutic procedures.
- To achieve the professional requirements for specialty-specific training (Phase B).
- To cultivate the correct professional attitude and enhance communication skill towards patients, their families and other healthcare professionals.
- To enhance sensitivity and responsiveness to community needs and the economics of health care delivery.
- To enhance critical thinking, self-learning, and interest in research and development of patient-care service.

- g) To cultivate the practice of evidence-based medicine and critical appraisal skills.
- h) To inculcate a commitment to continuous medical education and professional development.

3. Admission Requirements:

Medical graduate with successful completion of internship and with full registration with the BMDC will be selected by competitive admission test.

- A. Pre-requisites for admission in Phase-A
- B. The applicants should not be above 45 years of age on enrolment.
 - a) MBBS or equivalent degree as recognized by BMDC
 - b) One year of internship / in-service training
 - c) Completion of one year after internship / in-service training
 - d) BMDC registration
- C. Candidates for residency have to sit for a written MCQ-based admission test on Basic Medical Sciences and Faculty-based topics.

4. Phase A (Core Medical) Training:

The two-year Core Medical Training provides foundation training in General Internal Medicine which includes components of educational (academic) and training program in relevant fields of Applied Medical Sciences and General Internal Medicine. This training program will focus on developing core knowledge and skills, providing a foundation for consolidation and further study within advanced specialty-specific training.

4.1. Expected outcomes at the completion of Phase A Training Program

- At the completion of Phase A training, it is expected that Residents will have:
- Built on the knowledge and skills acquired during medical College and the internship years.

- Gained experience in, and had the opportunity to develop and demonstrate competency in, a comprehensive range of "core" generic and discipline-specific knowledge, clinical skills and attitudes
- Acquired the skills to be able to work within, and fully utilize, multidisciplinary team-based approaches to the assessment, management and care of their patients
- Implemented their future career-planning and decision making processes based on a more informed level of knowledge and understanding.

4.2. Structure of Training:

1. The core program consists of two years of supervised training with formative assessment and feedback. The Residents should have at least seven months of training in units dealing with general medical problems. The resident/the respective department then will have to choose 4 rotations, each comprising three & half months out of 9 rotations to complete 21 months of training. The last 3 months will be placed in the respective department, preparing themselves for the phase A Final examination.
2. Residents should acquire competence through supervised performance of the required numbers of diagnostic and therapeutic procedures during their Phase A Training.
3. Residents should attend the mandatory courses, workshops, etc as per curricular requirements.

5. Domains of Learning

5.1. Knowledge

1. Etiology, clinical manifestation, disease course and prognosis, investigation and management of common medical diseases.
2. Scientific basis and recent advances in path physiology, diagnosis and management of medical diseases.
3. Spectrum of clinical manifestations and interaction of multiple medical diseases in the same patient.
4. Psychological and social aspects of medical illnesses.

5. Cost-effective use and interpretation of investigations and special diagnostic procedures.
6. Critical analysis of the efficacy, cost-effectiveness and cost-utility of treatment modalities.
7. Patient safety and risk management
8. Medical audit and quality assurance
9. Ethical principles and medico legal issues related to medical illnesses.

5.2. Skills

1. Ability to take a detailed history, gathers relevant data from patients, and assimilates the information to develop diagnostic and management plans.
2. Competence in eliciting abnormal physical signs and interpreting their significance.
3. Ability to relate clinical abnormalities with pathophysiologic states and diagnosis of diseases.
4. Ability to select appropriate investigation and diagnostic procedures for confirmation of diagnosis and patient management.
5. Skills in performing important bedside diagnostic and therapeutic procedures and of their indications. Residents should acquire competence through supervised performance of the required number of procedures during the 2-year training period and should record them in the Logbook.
6. Ability to present clinical problems and literature review in grand rounds, journal club and seminars.
7. Good communication skills and interpersonal relationship with patients, families, medical colleagues, nursing and allied health professionals.
8. Ability to mobilize appropriate resources for management of patients at different stages of medical illnesses, including critical care, consultation of other specialties and disciplines, ambulatory and rehabilitative services, and community resources.

5.3. Attitudes

1. The well-being and restoration of health of patients must be of paramount consideration.
2. Empathy and good rapport with patient and relatives are essential attributes.
3. An aspiration to be the team-leader in total patient care involving nursing and allied healthcare professionals should be developed.
4. The cost-effectiveness of various investigations and treatments in patient care should be recognized.
5. The privacy and confidentiality of patients and the sanctity of life must be respected.

6. Teaching and Learning Methods:

For trainees to maximize their learning opportunities it is important that they work in 'a good learning environment'. This includes encouragement for self-directed learning as well as recognizing the learning potential in all aspect of day to day work. The bulk of learning occurs as a result of clinical experiences (experiential learning, on-the-job learning) and self-directed study. The degree of self-directed learning will increase as trainees became more experienced. Teaching and learning occurs using several methods that range from formal didactic lectures to planned clinical experiences. Aspects covered will include knowledge, skills and practices relevant to General Medicine in order to achieve specific learning outcomes and competencies. The theoretical part of the curriculum presents the current body of knowledge necessary for practice as an Internist. In this program this will be imparted using lectures, grand teaching rounds, clinico-pathological meetings, morbidity/mortality review meetings, literature reviews and presentations, journal clubs, self-directed learning, conferences and seminars.

6.1. Training Rotations:

Residents will undergo training rotation in different clinical services during first 21 months and the last 3 months for eligibility assessment and Phase Final Examination.

Phase A training rotations will be as follows:

- | | | |
|--|---|-----------|
| 1. Internal Medicine | - | 07 months |
| 2. Three and half months in any 4 (four) of the following departments: Cardiology, Endocrinology, Gastroenterology, Hepatology, Hematology, Nephrology, Neurology, Rheumatology, and Pulmonology | - | 14 months |
| 3. Eligibility assessment and Phase Final Exam | - | 03 months |

6.2. Teaching and training program in Internal Medicine

- At the end of the training program in Internal Medicine, the residents will be able to learn to
 - Take history properly
 - Examine the patients meticulously but must be relevant and pertinent
 - Enter the information correctly in the history sheet
 - Critically analyze the case
 - Formulate a clinical diagnosis and differential diagnoses
 - Know formulating first line and second line investigations
 - To interpret the investigations and lab reports carried with the patients
 - Have practical and working knowledge to interpret the investigations done in a patient for diagnosis
 - Manage all emergency medical cases
 - Manage common medical problems
 - Initiate management in all other medical problems
 - Know to diagnose and manage patients coming with multiple medical problems/diagnoses
 - Know when to refer, how to refer and whom to refer
- The residents will be responsible for admitted patient as per distribution and will present the case during ward round or case discussion schedule.

- They will attend OPD, evening, night or other duties as assigned by the department/units
- They will attend scheduled lecture classes, tutorials, journal clubs, grand round, clinical meeting and other departmental academic and training activities
- During the rotation in Internal Medicine they will perform the procedures as much as possible as mentioned in the logbook

6.3. Teaching and learning program in the rotations other than Internal Medicine

- At the end of the training program in a specific rotation, the residents will be competent enough to carry out diagnostic work-up and day-to-day management of the common problems encountered in the respective specialty
- They will attend OPD, specialty clinics, evening, night or other duties as assigned by the department/units
- They will attend scheduled lecture classes, tutorials, journal clubs, grand round, clinical meeting and other departmental academic and training activities
- They will have practical and working knowledge and be able to interpret the investigations necessary for diagnosing a patient relevant to the specialty
- During the rotation in a specific specialty they will perform the relevant procedures as much as possible covering the schedule in the logbook

Note: The teaching learning program contained in the curriculum not covered in the scheduled rotation will be covered by self learning by the resident

7. Record of Training:

The evidence requires confirming progress through training includes:

- Details of the training rotations, weekly timetables and duty rosters; case-mixes and numbers of practical procedures and outcomes.

- Confirmations of attendance at events in the educational program, at departmental and inter-departmental meetings and other (optional) educational events.
- Confirmation (certificates) of attendance at subject-based/skills-training/instructional courses.
- Recorded attendance at conference and meetings.
- A properly completed logbook with entries capable of testifying to the training objectives which have been attained and the Level of performance achieved.
- CME activity.
- Supervisor's reports on observed performance in the workplace

7.1. Logbook:

Residents are required to maintain a logbook in which entries of academic/professional work done during the period of training should be made on a daily basis, and signed by the supervisor. Completed and duly certified logbook will form a part of the application for appearing in Phase Final Examinations.

7.2. Portfolio:

This is a collection of evidence documenting trainee's learning and achievements during their training. The trainee takes responsibilities for the portfolio's creation and maintenance. It will form the basis of assessment of progression.

8. Assessment:

The assessment method is comprehensive, integrated and phase-centered attempting to identify attributes expected of specialists for independent practice and lifelong learning and covers cognitive, psychomotor and affective domains. It keeps strict reference to the components, the contents, the competencies and the criteria laid down in the curriculum. Assessment includes both **Formative Assessment and Summative (Phase final) Examinations.**

8.1. Formative Assessment:

Formative assessment will be conducted throughout the training phases. It will be carried out for tracking the of residents, providing feedback, and preparing them for final assessment (Phase completion exams).

There will be continuous (day-to-day) and periodic type of formative assessment.

- **Continuous (day-to-day) formative assessment** in classroom and workplace settings provides guide to a resident's learning and a faculty's teaching / learning strategies to ensure formative lesson / training outcomes.
- **Periodic formative assessment** is quasi-formal and is directed to assessing the outcome of a **block placement or academic module completion**. It is held at the end of Block Placement and Academic Module completion. The contents of such examinations include **Block Units** of the Training Curriculum and **Academic Module Units** of the Academic Curriculum.
- **End of Block Assessment (EBA):** End of Block Assessment (EBA) is a Periodic Formative Assessment and is undertaken after completion of each training block, assessing knowledge, skills and attitude of the residents. Components of EBA are written examination, Structured Clinical Assessment (SCA), medical record review, logbook review and portfolio assessment. Incomplete block training must be satisfactorily completed by undergoing further training for the block to be eligible for appearing in the next phase completion examination.

8.2. Summative (Phase A Final) Examination:

Phase A Final examination will be common for Medicine and Allied and will have following components:

- Written examination (SAQ/SEQ)
- Clinical examination:
 - Long case (1)
 - Short cases (4)
 - Structured Clinical Assessment (SCA-10)

9. Supervision and Training Monitoring

The training will incorporate the principle of gradually increasing responsibility, and provide each trainee with a sufficient scope, volume and variety of experience in a range of settings that include inpatients, outpatients, emergency and intensive care. All elements of work in training rotation will be supervised with the level of supervision varying depending on the experience of the Resident and the clinical exposure. Outpatient and referral supervision must routinely include the opportunity to personally discuss all cases. As training progresses the Resident should have the opportunity for increasing autonomy, consistent with safe and effective care for the patient. Residents will at all times have a Supervisor, responsible for overseeing their education and training.

Supervisors are responsible for supervision of learning throughout the program to ensure patient safety, service delivery as well as the progress of the resident with learning and performance. They set the lesson plans based on the curriculum, undertake appraisal, review progress against the curriculum, give feedback on both formative and summative assessments, and ensures proper recording of the and signing the logbook. The residents are made aware of their limitations and are encouraged to seek advice and receive help at all times.

The Course Coordinator of each department coordinates all training and academic activities of the program in collaboration with the **Course Manager(s)**. The **Course Director** of each faculty directs, guides and manages curricular activities under his / her jurisdiction and is the person to be reported to for all events and performances of the residents and the supervisors.

10. Curriculum Implementation, Review and Updating:

Both Supervisors and Residents are expected to have a good knowledge of the curriculum and should use it as a guide for

their training program. Since Medicine has historically been rapidly changing specialty, the need for review and up-dating of curricula is evident. The Curriculum is specifically designed to guide an educational process and will continue to be the subject of active redrafting, to reflect changes in both Medicine and educational theory and practice. Residents and Supervisors are encouraged to discuss the curriculum and to feedback on content and issue regarding implementation with the Course Director. Review will be time tabled to occur annually for any minor changes to the curriculum.

11. Syllabus

The aim of the syllabus for Phase A training is to guide the Residents to acquire broad based knowledge on Medicine before entering the Phase B specialty-specific training. Patients present themselves with problems and it is the problem that needs solving. A specialist who has broad based knowledge of Medicine will be able to solve the problem in a better way. So the ultimate objective of Phase A training is to produce a knowledgeable, competent, altruistic specialist with up to date background knowledge of Medicine. Emphasis has been laid on common diseases frequently encountered in this part of the world.

By the end of Phase A Training (Core Medical Training) the Resident should be able to:

- a. Assess presenting symptoms and signs
- b. Formulate appropriate investigations and accurately interpret investigation reports
- c. Communicate the diagnosis and prognosis
- d. Institute appropriate treatment recognizing indications, contraindications and side effects of common clinical conditions:

On this background, it is expected that Residents will be able to (i) acquire knowledge [of common medical conditions, emergencies, & rehabilitations], (ii) acquire skills [diagnostic,

clinical and decision making] and (iii) develop attitude [caring, learning, & ethical].

11.1. Learning Objectives:

A. CLINICAL SKILLS

1. Elicit the history and obtain other relevant data
2. Conduct an appropriate physical examination
3. Synthesize findings from history and physical examination to develop differential diagnoses, identify problems, make problem list and formulate management plan
4. Plan and arrange investigations appropriately

B. PATIENT CARE AND THERAPEUTICS

1. Manage general care in the unwell patient
2. Prescribe appropriate and safe pharmacotherapy
3. Incorporate health and wellness promotion in clinical practice
4. Manage patients with surgical problems
5. Facilitate ongoing care planning
6. Know his limitations and seeks appropriate consultation

C. PROCEDURAL SKILLS

1. Prepare patient for procedure
2. Competently perform procedures relevant to General Internal Medicine
3. Provide care following procedure

D. MANAGEMENT OF ACUTE MEDICAL PROBLEMS

1. Recognize and manage the critically ill patient
2. Manage specific acute medical problems
3. Communicate with patients and their families in an emergency situation

E. MANAGE PATIENTS WITH UNDIFFERENTIATED PRESENTATIONS

1. Manage patients with undifferentiated presentations (eg, Chest pain, cough, weight loss, etc)

F. MANAGE PATIENTS WITH COMMON DISORDERS OF ORGANS

1. Disorders of the cardiovascular system
2. Endocrine and metabolic disorders
3. Disorders of the gastrointestinal system
4. Disorders of the haemopoetic system.
5. Mental health disorders
6. Disorders of the musculoskeletal system
7. Disorders of the neurological system
8. Disorders of the renal and genitourinary systems
9. Disorders of the respiratory system
10. Skin disorders

G. MANAGE PATIENTS WITH DEFINED DISEASE PROCESSES

1. Manage patients with neoplastic diseases
2. Manage patients with genetic disorders
3. Manage patients with infectious diseases
4. Manage patients with electrolytes and acid base disorders

H. MEDICINE THROUGHOUT THE LIFESPAN/ GROWTH AND DEVELOPMENT

1. Manage common presentations in adolescents
2. Manage common presentations in pregnancy
3. Manage common problems associated with the menopause
4. Manage problems in the older patient
5. Manage patients at the end of life

11.2. Outline of Core Syllabus:

Core Syllabus in which the Resident should acquire good knowledge, clinical competence including appropriate technical abilities is outlined below.

Respective applied basic sciences will be integrated with the clinical science content

1. Disorders of Cardiovascular System:**Applied Basic science:**

Regional anatomy: fetal circulation, principal blood vessels, coronary anatomy and circulation; conducting system of the heart; Cardiac cycle; Cardiac performance

Core Clinical knowledge

<ul style="list-style-type: none"> • Symptoms and signs of heart and vascular diseases • Ischemic heart disease: stable angina, ACS • Arrhythmias and conduction defects • Heart failure • Cardiogenic shock • Hypertension • Dyslipidemia • Valvular heart disease 	<ul style="list-style-type: none"> • Infective endocarditis • Myocarditis • Pericarditis with pericardial effusion • Cardiomyopathies • Peripheral vascular disease • Congenital heart disease • Systemic disease and cardiology
---	---

Emergency management

<ul style="list-style-type: none"> • Unstable angina • Arrhythmias • Acute myocardial infarction • Left ventricular failure • Malignant hypertension 	<ul style="list-style-type: none"> • Cardiac tamponade • DVT and PE • CPR • Critical limb ischaemia
---	---

Common presentation scenarios

<ul style="list-style-type: none"> • Chest pain syndrome • Shock state • Acute pulmonary edema • Cyanosis 	<ul style="list-style-type: none"> • Breathlessness • Palpitations • Edema
---	---

Investigations, procedures, and interpretation

<ul style="list-style-type: none"> • ECG interpretation • Ambulatory 	<ul style="list-style-type: none"> • Cardiac catheterization • Cardiac pacing
--	---

<ul style="list-style-type: none"> • ETT • Echocardiography 	<ul style="list-style-type: none"> • Central venous cannulation • CT angiography
---	--

2. Endocrine and Metabolic Disorders**Applied Basic Science**

<ul style="list-style-type: none"> • Classification of hormones • Mechanisms of hormone action • Hypothalamic regulatory hormones • Anterior pituitary hormones • Posterior pituitary hormones 	<ul style="list-style-type: none"> • Adrenal cortex • Adrenal medulla • Thyroid • Pancreas • Physiological response in Pregnancy
---	---

Core Clinical knowledge

<ul style="list-style-type: none"> • Symptoms and signs of endocrine disorders • Diabetes mellitus • Hypoglycemia • Hypo- and hyperthyroidism • Hypo- and hypercalcemia • Thyroid nodules and cancer • Autoimmune thyroiditis • Hypopituitarism • Pituitary tumors 	<ul style="list-style-type: none"> • Multiple endocrine neoplasia • Obesity • Polycystic ovary syndrome • Hypogonadism • Menopause • Male sexual dysfunction • Hypo- and hyperadrenalism • Pheochromocytoma • Hyperaldosteronism, hypoaldosteronism
---	--

Emergency management

<ul style="list-style-type: none"> • Diabetic ketoacidosis • Hyperosmolar non-ketotic coma • Hypoglycemia • Addisonian crisis 	<ul style="list-style-type: none"> • Thyrotoxic crisis • Tetany • Hypercalcemic Crisis
---	---

Common clinical scenarios

<ul style="list-style-type: none"> • Thirst, polyuria syndrome • Hyperpigmentation • Weakness, fatigue 	<ul style="list-style-type: none"> • Sexual dysfunction • Appetite and weight symptoms • Hirsutism
---	---

Investigations and procedures

<ul style="list-style-type: none"> • CT and MRI pituitary and adrenals • Radionuclide scan of thyroid & RAIU • Ultrasound of thyroid • Short Synacthin Test • X-ray skull 	<ul style="list-style-type: none"> • Fine needle aspiration of thyroid nodules • Oral glucose tolerance test • Thyroid function tests/ FT3, FT4, TSH • Thyroid auto antibodies
--	--

3. Disorders of Gastrointestinal and Hepatopancreatic System:**Applied Basic science**

- Regional anatomy: surface markings, diaphragm, thoracic duct, esophagus, stomach, duodenum, liver
- Physiology of stomach, pancreas, biliary system, small intestine, colon

Core Clinical knowledge

<ul style="list-style-type: none"> • Symptoms and signs of gastrointestinal and hepatobiliary diseases • Oral Medicine • Esophagitis, oesophageal motility disorders & dysphagia, esophageal cancer • Peptic ulcer disease • Coeliac disease 	<ul style="list-style-type: none"> • Gallstone diseases • Alcoholic liver disease • Acute viral hepatitis • Chronic viral hepatitis • Cirrhosis of liver with portal hypertension • Primary biliary cirrhosis • Haemochromatosis • Wilson's disease
---	---

<ul style="list-style-type: none"> • Ulcerative Colitis • Crohn's disease • Gastric cancer • Functional bowel disorders • Malabsorption • Pancreatic cancer • Pancreatitis: acute & chronic • Colorectal cancer • Diverticular disease 	<ul style="list-style-type: none"> • Hepatic cancer • Gastro-intestinal hemorrhage • Ischemic bowel disease • Acute abdomen • Liver transplantation • Hepatic encephalopathy • Hepatic amoebiasis/liver abscess • Intestinal & hepatic helminthiasis
---	--

Emergency management

<ul style="list-style-type: none"> • Upper gastrointestinal hemorrhage • Acute pancreatitis 	<ul style="list-style-type: none"> • Acute abdomen • Fulminant hepatic failure
---	--

Common presentation scenarios

<ul style="list-style-type: none"> • Diarrhea: Acute & Chronic/ Dysentery • Abdominal pain • Dyspepsia 	<ul style="list-style-type: none"> • Jaundice • Abdominal distension including ascites and masses • Anorexia and weight loss
---	---

Investigations and procedures

<ul style="list-style-type: none"> • Upper gastrointestinal endoscopy • Intestinal biopsy • ERCP, MRCP • Sigmoidoscopy and Colonoscopy 	<ul style="list-style-type: none"> • Liver biopsy • Abdominal paracentesis • Plain radiology • Ultrasonography of the hepatobiliary system • Abdominal CT, MRI
--	---

4. Disorders of Haemopoetic System:**Applied Basic science**

- Hematopoiesis and hematopoietic growth factors
- Haemostasis

- Immunohematology; HLA typing
- Molecular basis of malignant blood disorders

Core clinical knowledge

<ul style="list-style-type: none"> • The anemias <ul style="list-style-type: none"> - Iron-Deficiency Anemia - Megaloblastic Anemia - Anemia of Chronic Disease - Aplastic Anemia • Primary and Secondary Erythrocytosis • Hemolytic Anemia: Congenital and Acquired • Iron-Overload Disorders • Immunohematology; HLA typing • Genetic Disorders of Hemoglobin • Platelet Disorders: Hereditary and Acquired • Myeloproliferative Diseases • Myelodysplastic Syndromes • Cytogenetics and Molecular Basis of Leukemia and Lymphoma 	<ul style="list-style-type: none"> • Acute Leukemia <ul style="list-style-type: none"> - Acute Myeloid Leukemia - Acute Lymphoblastic Leukemia • Chronic Leukemia <ul style="list-style-type: none"> - Chronic Myeloid Leukemia - Chronic Lymphocytic Leukemia and Related Disorders • Multiple Myeloma and Related Monoclonal Gammopathies • Lymphomas <ul style="list-style-type: none"> - Hodgkin's Disease - Non Hodgkin's Lymphoma • Hemostasis: Hemorrhagic and Thrombotic Disorders • Transfusions: Blood and Blood Components, Safe transfusion procedure, and complications of transfusions • Stem-Cell Transplantation
--	--

Emergency management

<ul style="list-style-type: none"> • Acute severe blood loss • Neutropenic fever with sepsis • Severe anemia 	<ul style="list-style-type: none"> • Disseminated intravascular coagulation • Bleeding due to hemophilia • Acute ITP
---	---

Common presentation scenarios

<ul style="list-style-type: none"> • Anaemia, polycythemia, pancytopenia, purpura, bleeding, hepatosplenomegaly, lymphadenopathy 	
---	--

Investigations and procedures

- Interpretation of CBC results
- Interpretation of blood films
- Bone marrow aspiration and trephine biopsy
- Interpretation of bone marrow aspiration and trephine biopsy
- BT, CT, PT, APTT
- Immunophenotyping

5. Infectious Diseases and Tropical Medicine

Applied Basic science

<ul style="list-style-type: none"> • Classification of micro-organisms • Bacterial characteristics, reservoirs of infections • Endotoxins, exotoxins • Antibacterial chemotherapy • Structure of viruses • Virus replication • Antiviral chemotherapy • Slow viruses 	<ul style="list-style-type: none"> • Parasites and antiparasitic chemotherapy • Opportunistic pathogens • Incubation periods • Vaccines and immunization schedules • Sterilisation and disinfection • Immunology: cells involved in the immune response to infection,
--	---

<ul style="list-style-type: none"> • Oncogenic viruses • Important serologic tests • Fungal structure • Antifungal chemotherapy 	<ul style="list-style-type: none"> cytokines, heat shock proteins, free radicals, nitric oxide, pathology of septic shock, basis of immunodeficiency states • Pathophysiology of fever
---	--

Core Clinical Knowledge

<ul style="list-style-type: none"> • Broad knowledge of bacterial, viral, fungal chlamydial and rickettsial diseases • Major infections of the sub-specialties of Medicine • Major infections of other Disciplines [surgery, obstetrics, intensive care etc] • Staphylococcal, streptococcal diseases • Typhoid • Malaria • Bacterial meningitis • Viral meningitis • Pulmonary tuberculosis • Extrapulmonary tuberculosis • Brucellosis • Infectious mononucleosis • Tetanus • Varicella-zoster • Major diseases of gastro-entero-colitis: salmonellosis, campylobacteriosis, shigellosis, yersiniosis, 	<ul style="list-style-type: none"> • HIV infection • Cryptococcosis • Systemic nosocomial invasive mycoses including Aspergillosis and Candidiasis • Antimicrobials: classification, mode of action principles and practice of use • Epidemiology of common infectious diseases • Principles of Infection Control • Important emergent infectious diseases • Vaccination • Infection in the immunocompromised • Diseases of the traveler, travel advice • Severe acute Respiratory illness (SARI) • Acute infectious neurologic syndrome (AINS) • Hemorrhagic fever syndrome (HFS) • Systemic inflammatory
---	--

<ul style="list-style-type: none"> <i>clostridium difficile</i>, giardiasis 	<ul style="list-style-type: none"> response syndrome- Sepsis (SIRS-S) • Amoebiasis • Kala-azar & PKDL
--	--

Emergency management

<ul style="list-style-type: none"> • Septicemia & septic shock • Bacterial meningitis • Severe malaria • Severe typhoid 	<ul style="list-style-type: none"> • Infections in the immunocompromised
---	---

Common presentation scenarios

<ul style="list-style-type: none"> • Fever • Fever of unknown origin • Rash • Lymphadenopathy & hepatosplenomegaly 	<ul style="list-style-type: none"> • Abnormal white blood counts
--	---

Investigations and procedures

<ul style="list-style-type: none"> • Lumbar Puncture • Bone marrow examination • Splenic aspiration • Serological tests related to specific disease • Interpretation of microbiology stains, culture results 	<ul style="list-style-type: none"> • Tuberculin testing • Sputum examination • Radiology investigations • FNAC • Blood slide preparation
---	---

6. Disorders of Renal and Genitourinary System:**Applied Basic science**

<ul style="list-style-type: none"> • Fluid balance • Acid-base balance • Kidney functions • Renal sodium transport 	<ul style="list-style-type: none"> • Salt and water balance • Renal transport of other solutes • Renal transport of water
--	--

Core Clinical knowledge

<ul style="list-style-type: none"> • Signs and symptoms of renal disease • Acid-base balance • Urinary tract infection • Chronic kidney disease/CRF • Dialysis • Renal transplantation • Glomerulonephritis • Renal tract malignancies • Over Active Bladder (OAB) 	<ul style="list-style-type: none"> • Renal tubular acidosis • Haematuria • Nephrotic syndrome • Renal calculi • Congenital urinary tract abnormalities • Urinary tract obstruction • Enlargement of prostate • Polycystic renal disease
---	---

Emergency management

- Acute kidney injury/ ARF
- Acute retention of urine

Common presentation scenarios

<ul style="list-style-type: none"> • Edema • Polyuria, polydyspnea, oliguria symptom complex • Renal and ureteric colic 	<ul style="list-style-type: none"> • Proteinuria • Hematuria • Dysuria
--	---

Investigations and procedures

<ul style="list-style-type: none"> • Renal function: Urea, creatinine and GFR • Renal biopsy • Radionuclide studies 	<ul style="list-style-type: none"> • Renal imaging: Xray KUB, US, CT, IVU • Interpretation of acid-base disturbances • Interpretation of electrolyte imbalance • Urine RU and CS
--	--

7. Disorders of Nervous System:**Applied Basic science**

- Regional anatomy of: dermatomes, spinal nerves, autonomic nervous system, central nervous system, cranial nerves

Core Clinical Knowledge

<ul style="list-style-type: none"> • Signs and symptoms of neurologic disorders • Stroke • Transient ischemia • Intracranial hemorrhages • Cerebral tumors • Meningitis and encephalitis • Basal ganglia diseases • Movement disorders • Epilepsy • Degenerative diseases • Neuropathy 	<ul style="list-style-type: none"> • Myopathy • Myasthenia gravis • Motor neurone disease • Spinal cord diseases • Multiple sclerosis and demyelinating diseases • Cranial nerve diseases • Brain death • Headache syndrome • Paraneoplastic syndromes
---	---

Emergency management

<ul style="list-style-type: none"> • Coma • Bacterial meningitis • Encephalitis • Raised intracranial pressure 	<ul style="list-style-type: none"> • Status epilepticus • Subarachnoid hemorrhage • Guillain Barre syndrome • Stroke
--	--

Common presentation scenarios

<ul style="list-style-type: none"> • Headache • Confusion • Loss of consciousness • Dizziness and vertigo • Paresthesia • Lower limb weakness 	<ul style="list-style-type: none"> • Speech problems • Abnormal movements • Ptosis • Facial palsy • Visual disturbances • Hemiplegia
---	--

Investigations and procedures

<ul style="list-style-type: none"> • Lumber Puncture • Interpretation of nerve conduction studies, EMG and characteristic types of EEG 	<ul style="list-style-type: none"> • Angiography • CT, MRI, radionuclide scanning • Muscle and nerve biopsy
--	--

8. Disorders of Respiratory System:**Applied Basic science**

<ul style="list-style-type: none"> • Regional anatomy: cricoid cartilage, larynx, thorax • Surface markings, bronchus divisions, pleural space. • Lung volumes and capacities • Mechanics of breathing 	<ul style="list-style-type: none"> • Pulmonary gas exchange and blood gas transport • Pulmonary circulation • Control of breathing • Response to chronic hypoxia
--	--

Core Clinical knowledge

<ul style="list-style-type: none"> • Symptoms and signs of respiratory disease • Asthma • Chronic obstructive lung disease • Community acquired pneumonia • Hospital acquired pneumonia • Bronchial carcinoma • Bronchiectasis • Chronic bronchitis • Emphysema • Mediastinal diseases • Chest wall diseases • Lung abscess • Pleural diseases • Cystic fibrosis 	<ul style="list-style-type: none"> • Pneumothorax • Sarcoidosis • Fungal lung diseases • Sleep apnoea • Pulmonary hypertension • Interstitial lung disease/DPLD • Pulmonary involvement in systemic diseases • Occupational lung diseases and exposure to dusts • Diseases of cigarette smoking • Respiratory failure • Assisted ventilation • Adult respiratory distress syndrome
--	--

<ul style="list-style-type: none"> • Pulmonary thrombo-embolic disease • Upper respiratory tract infections 	<ul style="list-style-type: none"> • Pulmonary TB
---	--

Emergency management

<ul style="list-style-type: none"> • Acute severe asthma • Pneumonia • Pulmonary embolism 	<ul style="list-style-type: none"> • Respiratory failure • Acute respiratory distress syndrome • Tension Pneumothorax • Acute exacerbation of COPD
--	--

Common presentation scenarios

<ul style="list-style-type: none"> • Hemoptysis • Acute and chronic breathlessness • Cough syndrome 	<ul style="list-style-type: none"> • Wheezing • Acute pneumonia syndrome and pulmonary infiltrate
--	---

Investigations and procedures

<ul style="list-style-type: none"> • Chest radiography • Pulmonary function tests & their interpretations • Bronchoscopy • Anti-asthma drug delivery system 	<ul style="list-style-type: none"> • Arterial blood gas & their interpretations • Intercostal tube placement & its management • Pleural fluid aspiration and study the report
---	--

9. Disorders of Musculoskeletal System:**Applied Basic science**

Structure of synovial Joints Synovial fluid Role of T cell and B cell in the pathogenesis of RA COX 1 and COX 2 pathway	
--	--

Core Clinical knowledge

<ul style="list-style-type: none"> • Osteoarthritis • Rheumatoid arthritis • The seronegative spondyloarthropathies: • ankylosing spondylitis, reactive arthritides such as psoriatic arthritis, and enteropathic arthritis • Juvenile idiopathic arthritis • Gout • Systemic lupus erythromatosis 	<ul style="list-style-type: none"> • Systemic sclerosis • Dermatomyositis and polymyositis • Infectious arthritis • Osteoporosis & osteomalacia • Fibromyalgia • Low back pain • Systemic Vasculitis • Common periarticular disorders
---	---

Emergency management

<ul style="list-style-type: none"> ◆ Acute LBP ◆ Septic arthritis ◆ Acute gouty arthritis ◆ Infection in immunocompromised condition 	
--	--

Common presentation scenarios

<ul style="list-style-type: none"> • Joint pain • Low back pain • Body ache • Rash 	
--	--

Investigations and Procedures

<ul style="list-style-type: none"> • Joint fluid aspiration • Intra-articular Injection 	<ul style="list-style-type: none"> • Interpretation of radiological, immunological and serologic tests.
---	--