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### 1. Introduction:

Medical education is a continuum from undergraduate through internship to Postgraduate Medical Training, Which is further divided into two stages: basis and higher professional training. Universally postgraduate medical training is competency-based and structures. In fact, self- learning aided by Continued Medical Education (CME) Programmes, 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 Programme. Phase A training of the programme, which lasts for two years, aims at a broad-based training in general internal medicine.

### 2. Objectives:

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

7. To cultivate the practice of evidence-based medicine and critical appraisal skills.
8. 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.**

- 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.

**B. The applicants should not be above 45 years of age on enrolment.**

**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 programme 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 Programme**

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.
- Gained a background knowledge and understanding of the full range of discipline areas which will facilitate cross referral/multi-specialty teamwork etc.
- 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 programme consists of two years supervised training with formative assessment and feedback.
2. The Residents should have at least one year of training in units dealing with general medical problems, of which at least six months should be spent in unit dealing with a comprehensive range of acute medical emergencies. They should also attend general and specialty outpatient clinics for no fewer than three hours per week throughout the two years of training.
3. Exposure to various medical specialty services parallel with duties in general medicine should be encouraged.
4. Residents should acquire competence through supervised performance of the required numbers of diagnostic and therapeutic procedures during their Phase B Training.
5. Residents should attend the mandatory courses, workshops etc as per curriculum requirements.

**4.3 Training Rotations:**

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

- |                                       |          |
|---------------------------------------|----------|
| 1. Internal Medicine (Block-1, 2 & 3) | 9 months |
| 2. Cardiology (Block-4)               | 3 Months |
| 3. Clinical Haematology (Block-5)     | 3 Months |
| 4. Neonatology (Block-7)              | 3 Months |

\* Last 3 months remains allotted for assessment & preparation of PHASE A Final examination.

**5. Domains of learning:****5.1 Knowledge**

1. Aetiology, clinical manifestation, disease course and prognosis, investigation and management of common medical diseases.
2. Scientific basis and recent advances in pathophysiology, 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 illness.
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, gather relevant data from patients and assimilate 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 understanding 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 mobilise appropriate resources for management of patients at different stages of medical illnesses, including critical care, consultation of medical specialties and other 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 recognised.
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 programme 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.

## 7. Record of Training:

The evidence require to confirm 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 programme, 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 A Final examination) Examinations:**

### 8.1 Formative Assessment:

Formative assessment will be conducted throughout the training phases. It will be carried out for tracking the progress

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 includes 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 Allied and will be have following components:

1. Written examination.
  - Paper I-Internal Medicine & Cardiology, 4 questions, each question consisting of 5 SAQ/SEQ type.
  - Paper-II, Haematology, Paediatric haematology & oncology and Neonatology, 4 questions, Each consisting of 5 SAQ/SEQ type.

2. Clinical examination:
  - Long case-One
  - Short cases-Four
3. Structured Clinical Assessment (SCA) 10 stations.
  - Examiners should be selected from the disciplines like Internal Medicine, Cardiology, haematology, Paediatric haematology & oncology and Neonatology.

### **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 curriculum activities under his/her jurisdiction and 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 programme. 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.

- 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. Synthesise findings from history and physical examination to develop a differential diagnosis, 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 pharmacotherapy.
3. Incorporate health and wellness promotion in clinical practice.
4. Manage patients with surgical problems.
5. Facilitate ongoing care planning.

#### 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. Recognise 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:**

**G. Manage Patients with Defined Disease Processes:**

**11.2 Outline of Core Syllabus:**

Internal Medicine & Cardiology. (Paper-I)

Haematology, Paediatric Haematology & Oncology, Neonatology (Paper-II)

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

**INTERNAL MEDICINE (BLOCK-1, 2 & 3).**

**1. Disorders of Respiratory System:**

**Basic science:**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Anatomy and Physiology of lungs.</li> <li>• Lung volumes and capacities.</li> <li>• Mechanics of breathing.</li> <li>• Pulmonary gas exchange and blood gas transport.</li> </ul> | <ul style="list-style-type: none"> <li>• Pulmonary circulation</li> <li>• Control of breathing</li> <li>• Response to chronic hypoxia.</li> </ul> |
|--|---|

**Core Clinical knowledge:**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Symptoms and signs of respiratory disease</li> <li>• Asthma</li> <li>• Chronic obstructive lung disease</li> <li>• Community acquired pneumonia</li> <li>• Bronchial carcinoma</li> <li>• Chronic bronchitis</li> <li>• Emphysema</li> <li>• Mediastinal diseases</li> <li>• Lung abscess</li> <li>• Pleural diseases</li> <li>• Cystic fibrosis</li> <li>• Pulmonary thrombo-embolic disease</li> </ul> | <ul style="list-style-type: none"> <li>• Upper respiration tract-infections.</li> <li>• Pneumothorax</li> <li>• Fungal lung diseases</li> <li>• Sleep apnoea</li> <li>• Pulmonary hypertension</li> <li>• Interstitial lung disease</li> <li>• Pulmonary involvement in systemic diseases.</li> <li>• Diseases of cigarette smoking</li> <li>• Respiratory failure</li> <li>• Assisted ventilature</li> <li>• Adult respiratory distress syndrome</li> <li>• Pulmonary TB</li> </ul> |
|---|--|

**Emergency management:**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Acute asthma</li> <li>• Pneumonia</li> <li>• Pulmonary embolism</li> </ul> | <ul style="list-style-type: none"> <li>• Acute upper airways obstruction.</li> <li>• Respiratory failure</li> <li>• Acute respiratory distress syndrome</li> </ul> |
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**Common Presentation scenarios:**

<ul style="list-style-type: none"> <li>• Hemoptysis</li> <li>• Sudden breathlessness</li> <li>• Cough syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• Wheezing</li> <li>• Acute pneumonia syndrome and pulmonary infiltrate.</li> </ul>
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**Investigations and procedures:**

<ul style="list-style-type: none"> <li>• Chest radiography</li> <li>• Interpretation of pulmonary function tests</li> <li>• Bronchoscopy</li> <li>• Arterial blood gases</li> </ul>	<ul style="list-style-type: none"> <li>• Interpretation of arterial gases</li> <li>• Intercostal tube placement</li> <li>• Pleural aspiration and Biopsy.</li> </ul>
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**2. Infectious Diseases:****Basic science:**

<ul style="list-style-type: none"> <li>• Classification of micro-organisms</li> <li>• Endotoxins, exotoxins</li> <li>• Antibacterial chemotherapy.</li> <li>• Structure of viruses.</li> <li>• Antiviral chemotherapy.</li> <li>• Interpretation of Important serologic tests</li> <li>• Fungal structure.</li> <li>• Antifungal chemotherapy.</li> <li>• Parasites and antiparasitic Chemotherapy.</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunistic pathogens.</li> <li>• Incubation periods</li> <li>• Vaccines and immunization schedules</li> <li>• Sterillisations and disinfection.</li> <li>• Immune response to infection, cytokines, heat shock proteins, free radicals, nitric oxide, pathology of septic shock, basis of immunodeficiency states.</li> <li>• Pathophysiology of fever.</li> </ul>
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**Clinical:**

<ul style="list-style-type: none"> <li>• Broad knowledge of bacterial viral, chlamydial and rickettsial diseases.</li> <li>• Major infections of the sub-</li> </ul>	<ul style="list-style-type: none"> <li>• Syphilis</li> <li>• Gonorrhoea.</li> <li>• Other sexually transmissible diseases</li> </ul>
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<ul style="list-style-type: none"> <li>specialties of Medicine.</li> <li>• Staphylococcal, streptococcal diseases Typhoid.</li> <li>• Malaria.</li> <li>• Bacterial meningitis.</li> <li>• Viral meningitis.</li> <li>• Pulmonary tuberculosis.</li> <li>• Extrapulmonary tuberculosis.</li> <li>• Anaerobic sepsis-gangrene.</li> <li>• Brucellosis</li> <li>• Infectious mononucleosis.</li> <li>• Tetanus</li> <li>• Varicella-Zoster</li> <li>• Major diseases of gastro-entero-colitis: Salmonellosis, campylobacteriosis, shigellosis, yersiniosis, clostridium difficile, giardiasis.</li> <li>• Amoebiasis.</li> </ul>	<ul style="list-style-type: none"> <li>• "Tropical" Diseases.</li> <li>• HIV infection.</li> <li>• Antimicrobials: classification, mode of action principles and practice of use.</li> <li>• Principles of Infection Control</li> <li>• Pyrexia of unknown origin</li> <li>• Viral haemorrhagic fevers.</li> <li>• Important emergent infections diseases</li> <li>• Vaccination</li> <li>• Infection in the immunocompromised</li> <li>• Notifiable diseases.</li> </ul>
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**Emergency Management:**

<ul style="list-style-type: none"> <li>• Septicemia &amp; septic shock</li> <li>• Bacterial meningitis</li> <li>• Severe malaria.</li> </ul>	<ul style="list-style-type: none"> <li>• Severe typhoid.</li> <li>• Infectious endocarditis.</li> <li>• Infections in the immunocompromised.</li> </ul>
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**Common presentation scenarios:**

<ul style="list-style-type: none"> <li>• Fever</li> <li>• Fever of unknown origin</li> <li>• Rash</li> <li>• Lymphadenopathy.</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic fatigue</li> <li>• Abnormal white blood counts.</li> <li>• Abnormal serology tests.</li> </ul>
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**Investigations and procedures:**

<ul style="list-style-type: none"> <li>• Lumbar Puncture</li> <li>• Abscess aspiration including radiology control</li> <li>• Serological tests.</li> <li>• Interpretation of microbiology stains, culture results.</li> </ul>	<ul style="list-style-type: none"> <li>• Tuberculin testing.</li> <li>• Sputum examination</li> <li>• Radiology investigations.</li> </ul>
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**3. Disorders of endocrine organs & metabolism:**

<ul style="list-style-type: none"> <li>• Hypothyroidism.</li> <li>• Hyperthyroidism.</li> </ul>	<ul style="list-style-type: none"> <li>• Diabetes</li> <li>• Diabetic coma.</li> </ul>
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**4. Disorders of Kidney:**

**Basic science:**

**Clinical:**

<ul style="list-style-type: none"> <li>• Anatomy &amp; Physiology of Kidney</li> <li>• Fluid balance</li> <li>• Acid base balance</li> <li>• Kidney functions.</li> <li>• Salt and water balance</li> <li>• Renal transport of water.</li> </ul>	<ul style="list-style-type: none"> <li>• Signs and symptoms of renal disease</li> <li>• Chronic kidney disease.</li> <li>• Dialysis</li> <li>• Diabetic renal disease</li> <li>• Acute kidney failure.</li> </ul>
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• **Emergency management**

**5. Disorders of Liver**

- Liver failure
- Liver function tests-interpretation.
- Transfusion in liver failure.

**(Block-4)**

**6. Disorders of Cardiovascular System:**

**a. Applied Basic Science:**

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

**b. Clinical :**

<ul style="list-style-type: none"> <li>• Symptoms and signs of heart and vascular diseases.</li> <li>• Ischemic heart disease; Stable angina, ACS.</li> <li>• Arrhythmias and conduction defects</li> <li>• Heart failure</li> <li>• Cardiogenic shock</li> <li>• Hypertension</li> </ul>	<ul style="list-style-type: none"> <li>• Infective endocarditis</li> <li>• Myocarditis and pericarditis</li> <li>• Cardiomyopathies</li> <li>• Peripheral vascular disease</li> <li>• Congenital heart disease</li> <li>• Systemic disease and cardiology.</li> </ul>
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**Emergency management:**

<ul style="list-style-type: none"> <li>• Unstable angina</li> <li>• Arrhythmias.</li> <li>• Myocardial infarction.</li> <li>• Left ventricular failure</li> <li>• Malignant hypertension.</li> </ul>	<ul style="list-style-type: none"> <li>• Cardiac tamponade</li> <li>• DVT and PE</li> <li>• CPR</li> <li>• Critical limb ischaemia.</li> </ul>
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**Common presentation scenarios:**

<ul style="list-style-type: none"> <li>• Chest pain syndrome</li> <li>• Shock state</li> <li>• Acute pulmonary edema</li> <li>• Cyanosis</li> </ul>	<ul style="list-style-type: none"> <li>• Breathlessness</li> <li>• Palpitations.</li> <li>• Edema.</li> </ul>
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**Investigations, procedures and interpretation:**

<ul style="list-style-type: none"> <li>• ECG interpretation</li> <li>• Ambulatory ECG</li> <li>• Interpretation of Echocardiography.</li> </ul>	<ul style="list-style-type: none"> <li>• Cardiac catheterization</li> <li>• Central venous canulation.</li> </ul>
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**(Block-5)**

**7. Disorders of Haematological System:**

Basic science

- Hematopoiesis and growth factors
- Immunohematology; HLA typing.
- Molecular basis of malignant blood disorders.

**Core clinical knowledge:**

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

<ul style="list-style-type: none"> <li>• Acute severe blood loss</li> <li>• Neutropenic fever with sepsis.</li> <li>• Deep venous thrombosis and pulmonary embolism.</li> </ul>	<ul style="list-style-type: none"> <li>• Disseminated intravascular coagulation.</li> <li>• Severe acute hemolysis.</li> <li>• Thrombotic thrombocytopenic purpura, hemolytic uremic syndrome.</li> </ul>
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**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.

**(Block-6)**

**8. Paediatric Haematology & Oncology:**

<p><b>Basic Knowledge</b></p> <ul style="list-style-type: none"> <li>• Special feature of Paediatric Physiology</li> <li>• Paediatric Nutrition</li> <li>• Paediatric blood volume</li> </ul>	<p><b>Core clinical knowledge</b></p> <ul style="list-style-type: none"> <li>• Paediatric anaemia</li> <li>• Paediatric jaundice</li> <li>• Paediatric haemorrhage</li> </ul>
<ul style="list-style-type: none"> <li>• Paediatric Coagulation disorders</li> <li>• Paediatric blood disorders</li> <li>• Paediatric malignancies.</li> <li>• Thesapreatics.</li> </ul> <p><b>Investigations &amp; procedures</b></p> <ul style="list-style-type: none"> <li>• Interpretation of PBF.</li> <li>• Interpretation of Hb-Electrophoresis.</li> </ul>	<ul style="list-style-type: none"> <li>• Interpretation of Bone marrow film.</li> <li>• Bone marrow aspiration &amp; biopsy.</li> <li>• Interpretation of reports.</li> <li>• Nebulization</li> <li>• O2 inhalation.</li> <li>• Chemotherapy</li> </ul>

- Management of Paediatric emergency.
- General clinical examination competency.

**(Block-7)****9. Neonatology:**

<b>Core clinical knowledge</b> <ul style="list-style-type: none"><li>• Antenatal diagnosis of disease.</li><li>• Neonatal anaemia.</li><li>• Neonatal Jaundice.</li><li>• Neonatal Haemorrhage.</li><li>• Special aspects of neonatal disorders.</li></ul> <b>Clinical skill</b> <ul style="list-style-type: none"><li>• General clinical examination of Neonate</li><li>• Paediatric sample collection.</li></ul>	<ul style="list-style-type: none"><li>• Neonatal &amp; Premature blood transfusion.</li><li>• CBC, Blood film- Interpretation.</li><li>• Marrow aspiration &amp; Biopsy</li><li>• Exchange transfusion</li><li>• Nebulization</li><li>• Use of Incubator.</li><li>• O2 Inhalation.</li></ul> <ul style="list-style-type: none"><li>* Neonatal emergency management.</li></ul>
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