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

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 procedures.
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.
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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 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 will undergo training rotations as per section 6.1.
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 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 illnesses.
5. Cost-effective use and interpretation of investigations and special diagnostic procedures.
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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 pathophysiological 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 mobilize 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.

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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 aspects 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 become 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) Dermatology (Endocrinology) - 3 months
2) Internal Medicine - 12 months
3) Dermatology, Psychiatry, Rheumatology, Nephrology - 3 months
4) Dermatology, Hematology, Cardiology, Peripheral vascular diseases - 3 months
5) Protected time - 3 months
6) Eligibility assessment and Phase Final Exam - 3 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
  - Learn to know formulating first line and second line investigation
  - 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 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 activities
- They will have practical and working knowledge and be able to interpret the investigations necessary for diagnosing patient relevant to that specialty
- 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 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 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 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 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 guidance 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 consist of 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 updating 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 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 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 safe pharmacotherapy
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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
   (e.g., 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 Rheumatic/Synovial joints & others
4. Disorders of the haemopoietic system
5. Psychiatric disorders
6. Disorders of the respiratory, hepatic, renal & gastrointestinal system
7. Neurological disorders
8. Disorders of the vascular system

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

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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. Internal Medicine
   
   Applied Basic Science
   - Antibacterial chemotherapy
   - Antiviral chemotherapy
   - Important serologic tests
   - Parasites and antiparasitic chemotherapy
   - Pathophysiology of fever

Core Clinical Knowledge
- Staphylococcal, streptococcal, and other diseases
- Typhoid
- Malaria
- Bacterial meningitis
- Viral meningitis
- Pulmonary tuberculosis
- Extrapulmonary tuberculosis
- Brucellosis
- Infectious mononucleosis
- Major gastrointestinal & hepatic diseases including salmonellosis, shigellosis, & amoebiasis
- Common infectious diseases
- Principles of Infection Control
- Pyrexia of unknown origin
- Viral hemorrhagic fever
- Kala-azar
- Bronchogenic carcinoma
- Diseases caused by Fungus
- Headache, migraine, vertigo
- Peripheral neuropathy
- Diseases caused by deficiencies of Vitamins & Minerals
**Emergency management**
- Septicemia & septic shock
- Bacterial meningitis
- Severe malaria
- Severe typhoid

**Infections in the immunocompromised**
- Bronchial Asthma
- Pneumonia
- COPD
- MI

**Common presentation scenarios**
- Fever
- Rash
- Lymphadenopathy & Hepatosplenomegaly
- Abnormal white blood counts
- Dyspnea, Chest pain

**Hemoptysis**
- Pleural effusion
- Cyanosis
- Raynauds
- Ulcers

**Investigations and procedures (observation & interpretation)**
- Lumbar Puncture
- Serological tests related to specific disease
- Interpretation of microbiology stains, culture results
- Peritoneal fluid aspiration
- Nasogastric intubation
- Urethral catheterization

- ABG analysis
- Tuberculin testing
- Sputum examination
- Radiology investigations
- FNAC
- Blood slide preparation

**2. ENDOCRINE AND METABOLIC DISORDERS**

**Applied Basic Science:**
- Related anatomy & Physiology of Hormones
- Physiological responses in Pregnancy

**Core Clinical knowledge**
- Symptoms and signs of endocrine disorders
- Diabetes mellitus
- Hypoglycemia
- Hypo- and hyperthyroidism
- Hypo- and hypercalcemia
- Autoimmune thyroiditis

- Obesity
- Polycystic ovary syndrome
- Hypogonadism
- Menopause
- Male & Female sexual dysfunction
- Hyperkalemia,

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- Hypopituitarism
- Hypokalemia
- Hypermagnesemia
- Hyponatremia
- Acidosis & Alkalosis

**Emergency management**
- Diabetic ketoacidosis
- Hypoglycemia

**Common clinical scenarios**
- Thirst, polyuria syndrome
- Hyperpigmentation
- Weakness, fatigue

**Investigations and procedures (Observation & Interpretation)**
- CT and MRI pituitary and adrenals
- Radionuclide scan of thyroid & RAIU
- Ultrasound of thyroid
- Short Synacthen Test

- X-ray skull
- Oral glucose tolerance test
- Thyroid function tests/ FT3, FT4, TSH
- Thyroid auto antibodies

**3. PSYCHIATRY**

**Core Clinical knowledge**
- Organic: Delirium, Dementia
- Schizophrenia & Delusional disorders
- Mood disorders: Depression, mania
- Anxiety disorder

**Emergency management (to be observed)**
- Schizophrenia
- Substance misuse

**Investigations, procedures, (Observation and interpretation)**
- CT Scan
- EEG
- Psychotherapy
4. RHEUMATOLOGY

Applied Basic science:
Anatomy & Physiology of Synovial Joints & Others

Core Clinical knowledge

- Monoarthritis, Poly arthritis
- Osteoarthritis & related disorders
- Rheumatoid arthritis
- Psoriatic arthritis
- Spondylitis
- Juvenile idiopathic arthritis
- MCTD
- Systemic sclerosis
- Polymyositis & Dermatomyositis
- Osteoporosis
- Low back pain
- Vasculitis

Emergency management

- Acute arthritis
- SLE

Investigations, procedures, (Observation and interpretation)

- Interpretation of radiological, immunological & serological tests
- Joint aspiration, Synovial fluid analysis
- Joint injection

5. NEPHROLOGY

Applied Basic science:
Functional anatomy & Physiology of Renal system

Core Clinical knowledge

- UTI & Pyelonephritis
- Systemic manifestations of renal diseases
- CKD
- AGN
- Nephrotic syndrome

Emergency management

- Acute renal failure
- Lupus nephritis

Investigations, procedures, (Observation and interpretation)

- Urine analysis
- Renal function tests
- Renal biopsy
- Imaging

6. DISORDERS OF HEMATOPOIETIC SYSTEM:

Applied Basic science

- Hematopoiesis and hematopoietic growth factors
- Haemostasis
- Immuno-hematology: HLA typing

Core clinical knowledge

- The anemias
  - Iron-Deficiency Anemia
  - Megaloblastic Anemia
  - Anemia of Chronic Disease
  - Aplastic Anemia
  - Hemolytic Anemia: Congenital and Acquired
- Platelet Disorders: Hereditary and Acquired
- Acute & Chronic Leukemia
  - Acute Myeloid Leukemia
  - Acute Lymphoblastic Leukemia
  - Lymphomas
  - Hodgkin’s
  - Non Hodgkin’s

Emergency management

- Disseminated intravascular coagulation
- Acute ITP

Common presentation scenarios

- Anaemia, polycythemia, Pancytopenia, purpura, bleeding
- Hepatosplenomegaly, lymphadenopathy

Investigations, procedures, (Observation and interpretation)

- 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

7. DISORDERS OF CARDIOVASCULAR SYSTEM:

Applied Basic science:
Related to heart & blood vessels.

Core Clinical knowledge

- Ischemic heart disease; Stable angina, ACS
- Hypertension
- Dyslipidemia
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- Arrhythmias and conduction defects
- Heart failure
- Cardiogenic shock

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- Peripheral vascular disease

Emergency management

- Unstable angina
- Myocardial infarction
- Acute cardiac failure

Common presentation scenarios

- Chest pain syndrome
- Shock state
- Acute pulmonary edema
- Breathlessness
- Palpitations
- Edema

Investigations, procedures, (Observation and interpretation)

- ECG interpretation
- Echocardiography

8. PERIPHERAL VASCULAR DISEASES

Applied Basic Science:
Peripheral vascular circulation

Core Clinical knowledge

- Petechia, Purpura
- Vasculitis
- Livedo reticularis
- Chronic venous insufficiency
- Leg ulcer
- Lymphedema
- Thrombophlebitis
- Thromboangitis obliterans
- Gangrene
- Vascular Nevus

Investigations, procedures, (Observation and interpretation)

- Venography
- Lymphoscintigraphy
- Duplex study of blood vessels

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