

***Residency Program  
Doctor of Medicine (MD)  
Curriculum (Phase-B)***

***Physical Medicine and  
Rehabilitation***



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Dhaka, Bangladesh**

**1. Introduction:**

Physical Medicine and Rehabilitation focuses on the diagnosis and management of disease and its effects on the functioning of the individual. The WHO definition of rehabilitation, approved by the World Health Assembly, (WHA May 2011) is 'The use of all means aimed at reducing the impact of disabling and handicapping conditions and at enabling disabled people to achieve optimal social integration.' To improve the health and nutritional status of the people of the country, various specialties were developed. The specialty in Physical Medicine and Rehabilitation (PM&R) was introduced in 1989 by Bangladesh College of Physicians and Surgeons (BCPS). Physical medicine covered clinical responsibility for rheumatic and other musculoskeletal disorders and responsibility for the organization of services of occupational therapy, physiotherapy, remedial gymnastics and medical rehabilitation. The ultimate aim of this specialty is medical rehabilitation of physical disability resulting from diseases and traumas. Considering the importance of Physical Medicine and Rehabilitation (PM&R, Bangabandhu Sheikh Mujib Medical University (BSMMU) introduced MD course after its inception in 1998. Recently the University decided to start 5 years long MD residency Phase-A and Phase- B program instead of MD part I, part II and part III. There are five professors, four associate professors, and two assistant professors in the department. They are very active in teaching, education and research. The teachers are involved in teaching not only for the department only but also they involved in the development of education of the subject throughout the whole country. They also have connection with other countries of the world to update knowledge. They are involved in the clinical services to the patients and academic

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activities for the students. There are ten medical officers, thirteen physiotherapist and seven MLSS in the department. They all are the part and parcel of the department and help the department to improve the service of the patients. The department have four out patients spot where about 300 (Three hundred) patients receive OPD service. Inpatients service is not yet started but hope to start it very soon. There are many modern physiotherapeutic instruments in the department which are used to treat various kinds of pain and disabilities of the patients. Residency course in the subject was started in 2010 and the residents were promoted to phase-B course so the need for modification of phase-B course and curriculum arises.

**General Aims:**

1. To prepare physiatrist (specialist in physical medicine and rehabilitation) who would be able to meet and respond to the changing health care need and expectation of the society.
2. To prepare physiatrist who would be able to assess the patient with an appropriate psychiatric history and examination in problem oriented approach in patients with symptoms in terms of:
  - a) Description of impairment, disability and handicap
  - b) Differential diagnosis.
  - c) Relevant investigations
  - d) Appropriate management plan (medical, surgical and rehabilitation).
  - e) Interdisciplinary team approach.

Basic knowledge of research methodology will also be taken which will help the candidate in preparing their thesis for residency Phase- B.

**2. Objectives:**

**General Objectives:**

The trainee will follow the specialty training curriculum, which include common competencies. The specialty curriculum identifies competencies which are expressed as the knowledge, skills, attitudes and behaviours that trainee must achieve. In residency Phase- B, theoretical knowledge of aetiology, pathology, clinical features, diagnosis, management and prognosis of various diseases of medicine and paediatrics causing disabilities will be expected to achieve by the candidate. Knowledge of the internal medicine will be the foundation. The knowledge should be sufficient for a candidate, who may subsequently specialize to examine and assess patient and identify special needs of the patient in physiatry and to manage the patient independently.

**Learning objectives:**

- a) to gather knowledge of the principal characteristics of the specific conditions.
- b) To become competent in clinical assessment, interpretation, diagnosis and management of the conditions related to physiatry.
- c) To learn core knowledge to support diagnosis and management with particular emphasis on current therapeutic interventions as well principles of multidisciplinary rehabilitation.
- d) Should be able to practice rehabilitation medicine at the door step of community and should be familiar with the common diseases causing disability in the rural areas and deal with them effectively.
- e) Should be able to plan educational programs in Rehabilitation Medicine in association with senior colleagues and be familiar with the modern methods of teaching and evaluation.

No syllabus can be comprehensive. Hence this syllabus is indicative of those areas of knowledge with which a physiatrist expected to be familiar; but is not intended to be exhaustive or to other items of knowledge, which are of similar relevance. This syllabus may be reviewed and changed if needed.

### **3. Admission Requirements for Phase B Program:**

Residents who have successfully Complete Phase a Training and Passes Phase A Final Exam in Physical Medicine are eligible for enrolment in the Phase B Program.

### **4. Phase-B Specialty Training:**

The training shall be according to the University's own rules. The training shall be of residency type. The trainee will have to perform academic activities along with primary responsibilities to treat patients as well. Attendance should be 75% in all training schedule.

The training in MD Phase-B in Physical Medicine and Rehabilitation will be comprehensive and structural. The resident will be responsible for treatment of patients, will attend lecture classes, will observe or perform various diagnostic and therapeutic procedures, will attend participate in seminars, journal clubs, clinical meetings and other academic activities. A logbook shall be maintained. The resident will be expected to be competent in history taking, identification and assessment of Physical disabilities and their etiological factors, identification of further investigations required and the management of patients along with their rehabilitation aspects. The label of skills required is that

required for someone who is able to work independently. They must have exposure to outpatient clinics, in-patient units along with management of emergencies in Physical Medicine and Rehabilitation.

### **5. Record of Training:**

The evidence required to confirm progress through training includes:

- 1) Details of training rotations, weekly timetables and duty rosters; case presentations and numbers of practical procedures and outcomes.
- 2) Confirmations of attendance at events in educational program at departmental and inter-departmental meetings and other optional educational events.
- 3) Confirmation (certificates) of attendance at subject-based/skills-training/instructional courses.
- 4) Recorded attendance at conference and meetings.
- 5) A properly completed logbook with entries capable of testifying to the training objectives which have been attained and the level of performance achieved.
- 6) CME activity.
- 7) Supervisor's reports on observed performance in the workplace.

### **For the phase-B course required training shall be as follows:**

This Phase of the course will include exclusive training in Physical Medicine and Rehabilitation including visit in related other hospitals, e.g. RIHD, NICVD, IDCH, BIRDEM, DMCH, etc if possible. The department will decide duration of training in these hospitals in structured block. During this period of

training, the resident will be expected to achieve necessary skill in general Physical Medicine and Rehabilitation along with various rehabilitation procedures in Rehabilitation Medicine as in rehabilitation of stroke patients, traumatic brain injury (TBI). Spinal injury, Rheumatological and other musculo-skeletal diseases rehabilitation and rehabilitation of cardiac and chest diseases and management of critically ill patients. This training will be accomplished in the various departmental special clinics such as neuro-rehabilitation clinic, Rheumatological & other musculo-skeletal diseases rehabilitation clinic, spinal injury rehabilitation clinic and amputee rehabilitation with orthotics and prosthetics clinic.

**Phase-B training rotations:**

Physical Medicine and rehabilitation training comprises rotations in:

- a) General physical medicine and rehabilitation, epidemiology, biostatistics and research methodology- 12 months
- b) Stroke and other neurological diseases rehabilitation-6 months
- c) Musculoskeletal and rheumatic diseases rehabilitation 6 months
- d) Spinal injury rehabilitation- 3 months
- e) Traumatic brain injury rehabilitation-3 months
- f) Post surgical orthopaedic conditions and amputee rehabilitation and orthotics and prosthetics and sports injuries -3months.
- g) Interventional physiatry and electrodiagnosis and community rehabilitation and students teaching programs- 3 months

**6. Training Assessment and Maintenance of Logbook:**

Each resident will maintain the training logbook duly signed by the supervisors, which will then be countersigned by course manager and course coordinator. The evaluation of performance of a resident will be basically on successful completion of the logbook/portfolio and the supervisor's report. In addition departmental formative assessment examinations will be taken at the end of each block of training in six competencies like

- 1. Patient care
- 2. Medical knowledge
- 3. Practice based learning
- 4. Interpersonal and communication skill.
- 5. Professionalism
- 6. System based practice.

Continuous day-to-day formative assessments in classroom and work places settings provides guide to ensure resident's learning and training outcomes.

**7. Research:**

Development of research competencies is an important part of the Residency Program Curriculum for effective clinical practice. A part of this course will be research oriented for which lecture classes will be taken on epidemiology, research methodology and biostatistics. Undertaking research helps to develop critical thinking and ability to review medical literatures. The resident will prepare their thesis during this part of the course under the guidance of a recognized supervisor.

**Thesis and thesis defense**

Every student will have to prepare thesis on any topic related to physical medicine and rehabilitation. The topic will be selected by the candidate and should be approved by departmental technical committee and then by the Institutional Review Board (IRB) of the university . In addition to his routine duty he or she will prepare the thesis. During last 3 months student will prepare thesis and develop skill in physiatric technologies and other interventional methods. Thesis will be treated as a pre requisite for passing the phase-B examination. If any student unable to prepare thesis before the examination he/she will not be allowed to appear in the written, oral, practical, and clinical examination. Marks allotted for thesis will be 200 and thesis defense will be 100. Time allowed for thesis defense examination will be for 40 minutes. To pass the examination as a whole the candidate must pass in written, oral, practical and clinical examination individually and also in aggregate

The resident will be allowed to appear in the written and practical examination after successful completion of the thesis.

Pass mark in written examination will be 60% and oral, practical and clinical examination with thesis and thesis defense will be 60%. Success in both components must be achieved in one sitting. Components will not be transferable or dividable and can be modified according to the universities own rules.

**Syllabus for MD (Doctor of Medicine) Phase-B  
Course in Physical Medicine and Rehabilitation**

**Phase-B**

**A -1 General Physical medicine and rehabilitation**

- a) Organization of rehabilitation services
- b) Evaluation of patient for rehabilitation
- c) Prescription writing in physical medicine and rehabilitation
- d) Measurement of musculoskeletal function
- e) Gait analysis, diagnosis of abnormal gaits and management
- f) Speech and language disorders
- g) Neurophysiology of motor function
- h) Therapeutic exercises to maintain mobility
- i) Therapeutic exercises to develop neuromuscular coordination
- j) Therapeutic exercises to develop strength and endurance
- k) All thermo-therapy modalities, uses. Indications and Contra-indications
- l) Electrodiagnostic techniques
- m) Electrotherapy modalities, indications and contra-indications.
- n) Acupuncture in Physiatry
- o) Massage- technique, indications and contra-indications.

**A-2 Epidemiology**

- a) The epidemiology of disability as related to physical medicine and rehabilitation.
- b) Psychological assessment and management
- c) Psychological diagnosis and social work services
- d) Vocational assessment management
- e) Prevocational evaluation
- f) Health accounting- functional assessment of long term patient.
- g) Environmental accessibility for physically disabled people.

**A-3 Research Methodology in Physiatry.**

- a) Principle of research
- b) Classification, stages and selection of subjects
- c) Research design and ethical consideration
- d) Outcome measures
- e) Data presentation and analysis.
- f) Writing for publication
- g) Ethics in rehabilitation research

**2. Occupational therapy**

- a) Principles of occupational therapy.
- b) Occupational therapy and physical disability
- c) Occupational therapy for restoration of physical disability
- d) Training for functional independence (ADL training)
- e) Training of home making activities.
  - 1. Principles of Rehabilitation Nursing
  - 2. Management of chronic pain
  - 3. Rehabilitation of patient with cancer

**B. Post surgical orthopaedic conditions and other post-surgical patients and sports medicine:**

- a. After care of fracture
  - i) Treatment in early stage.
  - ii) Treatment in late stage
  - iii) Myositis ossificans.
  - iv) Muscle wasting due to disuse and Volkmans ischaemic Contracture
  - v) After care of joint dislocations.
- b. Rehabilitation following limb amputation (amputee)
  - i) Principles of physiatric management.
  - ii) Rehabilitation of upper limb amputee
  - iii) Rehabilitation of lower limb amputee.

- c) Rehabilitation of traumatic brain injury (TBI)
- d) Neuropsychological assessment and training in acute brain injury.
- e) Rehabilitation after reconstructive surgery of extremities.
- f) Rehabilitation of traumatic and congenital lesion of the spinal cord
- g) Orthotics and prosthetics
  - i) Upper extremity orthoses
  - ii) Lower extremity orthoses
  - iii) Spinal orthoses.
- h) Foot wear and foot wear modifications.
- i) Rehabilitation of spinal disorders and deformities.

**C. Stroke and other Neurological diseases**

- a) Rehabilitation of patients with completed stroke.
  - i) Rehabilitation during acute phase.
  - ii) Long term rehabilitation.
  - iii) Treatment of spasticity by neurolysis.
- b) Rehabilitation of patients with degenerative diseases of central nervous system
  - i) Dementia
  - ii) Parkinsons disease
  - iii) Huntingtons disease
  - iv) Cerebellar system degeneration
  - v) Motor neuron disease.
- c) Rehabilitation management of diseases of the motor unit
  - i) General principles of management
  - ii) Duchenne muscular dystrophy
  - iii) Spinal muscular atrophy
  - iv) Amyotrophic lateral sclerosis
  - v) Guillain-Barre syndrome
  - vi) Paralytic poliomyelitis

- vii) Other disorder of peripheral nerve
- viii) Congenital myopathies
- ix) Arthrogyrosis
- d) Rehabilitation of swallowing impairment
- e) Rehabilitation of neurogenic dysfunction of bowel and bladder
- f) Diagnosis and rehabilitation of auditory disorders.

**Paediatric diseases**

- g) Rehabilitation of children with brain damage - cerebral palsy
- h) Rehabilitation of children with myopathy
- i) Rehabilitation of children with arthritis and other joint diseases.

**Cardiorespiratory diseases**

- j) Rehabilitation of patients with heart disease.
- k) Rehabilitation of patients with vascular diseases.
- l) Rehabilitation of patients with respiratory dysfunction.
  - I. Chronic obstructive pulmonary diseases
  - II. Neuromuscular and skeletal disorders.

**Rehabilitation of patients with problems of sexuality on physical disability.**

**Prevention and rehabilitation of ischaemic ulcer.**

**D. Musculoskeletal and Rheumatological diseases:**

- i) Principles and aims of/ diagnostic considerations in rehabilitation of Joint diseases.
- ii) Rehabilitation of patients with degenerative joint diseases
  - i) Osteoarthritis of hip joints
  - ii) Osteo arthritis of Knee
  - iii) Osteoarthritis of ankle joints

- iv) Osteoarthritis of upper limb joints.
- iii) Rehabilitation of patients with rheumatoid arthritis
- iv) Rehabilitation of patients with spondyloarthritides
- v) Ankylosing spondylitis
- vi) Reactive arthritis
- vii) Psoriatic arthritis
- viii) Enteropathic arthritis
- ix) Rehabilitation of patients with systemic lupus erythematosus.
- x) Rehabilitation of patients with progressive systemic sclerosis
- xi) Rehabilitation of patients with gout and other metabolic arthropathies.
- xii) Rehabilitation of patients with diabetes and endocrine athropathies
- xiii) Rehabilitation of patients with vasculitis
- xiv) Rehabilitation of patients with miscellaneous arthritic disorders.
  - 1. Neuropathic joint diseases
  - 2. Reflex sympathetic dystrophy (RSDS)
  - 3. Hyper tropic pulmonary osteoarthropathy.
  - 4. Infectious arthropathy
- xv) Soft tissue rheumatism
  - 1. Fibromyalgia
  - 2. Focal syndrome
  - 3. Polymyalgia rheumatica
- xvi) Rehabilitation of patients with osteoporosis
  - 1. Primary involutional osteoporosis
  - 2. Secondary osteoporosis



**Others Rehabilitation**

- 1) Rehabilitation of patients with burn and its complications
- 2) Rehabilitation of patients with lymphoedema
- 3) Rehabilitation of geriatric patients.
- 4) Rehabilitations relationship to inactivity
- 5) Principles in gait training and prescription of walking aids
- 6) Bed positions.
- 7) Transfers
  - a) Methods
  - b) Equipments
- 8) Preparation

**Interventional Physiatry**

1. Peripheral joint, soft tissue and spinal injection techniques
2. Interventional pain management procdures

**The role of Assistive technology in rehabilitation**

1. Wheel chair prescription.
2. Other assistive devices

**8. Annexure 1:**

**Clinical Training Rotations**

Block 1						
Months	1st	2nd	3rd	4th	5th	6th
<b>Educational Program</b>	Global burden of disability, Organization of Rehabilitation services, Principle of Rehabilitation, Occupational Rehabilitation, Applied anatomy and Physiology, Pathology related to PMR. <b>Basic Courses:</b> Biostatistics, Research Methodology, Basics of Medical Education					E O B A
<b>Clinical Training Rotations</b>	Inpatient, Outpatient, Emergencies in PMR					
<b>Thesis Work</b>	Protocol development/Submission/ IRB clearance					

Block 2						
Months	7th	8th	9th	10th	11st	12nd
<b>Educational Program</b>	Rehabilitation of post surgical Orthopaedic conditions and other post-surgical patients and sports medicine					E O B A
<b>Clinical Training Rotations</b>	Inpatient, Outpatient, Emergencies in PMR					
<b>Thesis Work</b>	Protocol development/Submission/ IRB clearance					

Block 3						
Months	13rd	14 <sup>th</sup>	15 <sup>th</sup>	16 <sup>th</sup>	17 <sup>th</sup>	18 <sup>th</sup>
<b>Educational Program</b>	Rehabilitation of Stroke and other Neurological diseases					E O B A
<b>Clinical Training Rotations</b>	Inpatient, Outpatient, Emergencies in PMR					
<b>Thesis Work</b>	Patient enrolment, intervention and data collection					

Block 4						
Months	19 <sup>th</sup>	20 <sup>th</sup>	21 <sup>st</sup>	22 <sup>nd</sup>	23 <sup>rd</sup>	24 <sup>th</sup>
<b>Educational Program</b>	Rehabilitation of Musculoskeletal and Rheumatological diseases					E O B A
<b>Clinical Training Rotations</b>	Inpatient, Outpatient, Emergencies in PMR					
<b>Thesis Work</b>	Patient enrolment, intervention and data collection					

Block 5						
Months	25 <sup>th</sup>	26 <sup>th</sup>	27 <sup>th</sup>	28 <sup>th</sup>	29 <sup>th</sup>	30 <sup>th</sup>
<b>Educational Program</b>	Rehabilitation of Paediatric diseases, Cardiorespiratory diseases, patient with problem of sexuality on physical disability, ischaemic ulcer and others					E O B A
<b>Clinical Training Rotations</b>	Inpatient, Outpatient, Emergencies in PMR					
<b>Thesis Work</b>	Data processing and Analysis					

Block 6						
Months	31 <sup>st</sup>	32 <sup>nd</sup>	33 <sup>rd</sup>	34 <sup>th</sup>	35 <sup>th</sup>	36 <sup>th</sup>
<b>Educational Program</b>	Interventional Physiatry, Role of assistive technology in rehabilitation		E O B A	<b>Eligibility Assessment and Phase B Final Examination</b>		
<b>Clinical Training Rotations</b>	Inpatient, Outpatient, Emergencies in PMR					
<b>Thesis Work</b>	Report writing and Submission					

**9. Annexure 2:  
Contents of Written Papers  
Paper 1**

Group-A	Group-B
<ul style="list-style-type: none"> <li>• General Physical medicine and Rehabilitation,</li> <li>• Epidemiology and Research methodology,</li> <li>• Occupational therapy,</li> <li>• Sports Medicine,</li> <li>• Management of chronic pain and rehabilitation of patient with cancer</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation of post surgical Orthopaedic conditions and other post-surgical conditions,</li> <li>• Traumatic Brain injury (TBI),</li> <li>• Spinal injury rehabilitation,</li> <li>• Orthoses, Prostheses,</li> <li>• Foot wears and foot wears modifications.</li> </ul>

**Paper 2**

Group -A	Group-B
<ul style="list-style-type: none"> <li>• Rehabilitation of stroke and other neurological diseases,</li> <li>• Rehabilitation of children with brain damage and other diseases (paediatric patient rehabilitation)</li> <li>• Cardio-pulmonary rehabilitation.</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation of rheumatological diseases,</li> <li>• Rehabilitation of endocrine and metabolic diseases.</li> <li>• Rehabilitation of geriatric patients.</li> </ul>