SAUDI BOARD OF PHYSICAL MEDICINE AND REHABILITATION (SBPMR)

Definition of Physical Medicine and Rehabilitation

Physical Medicine and Rehabilitation (PM&R), also referred to as physiatry, is a medical specialty concerned with the diagnosis, evaluation, and management of persons of all ages with physical and/or cognitive impairment and disability. This specialty involves diagnosis and treatment of patients with painful or functionally limiting conditions, the management of comorbidities and co-impairments, diagnostic and therapeutic injection procedures, electrodiagnostic medicine, and emphasis on prevention of complications of disability from secondary conditions.

Physiatrists are trained in the rehabilitation of neurological disorders, and in the diagnosis and management of impairments of the musculoskeletal (including sports and occupational aspects) and other organ systems, and the long-term management of patients with disabling conditions. Physiatrists provide leadership to multidisciplinary teams concerned with maximal restoration or development of physical, psychological, social, occupational and vocational functions in persons whose abilities have been limited by disease, trauma, congenital disorders or pain to enable people to achieve their maximum functional abilities. (ABPMR)

Rehabilitation Medicine emphasizes maximal restoration of the physical, cognitive, psychosocial and vocational functions of the person, the maintenance of health and the prevention of secondary complications of disability.

Introduction

The starting resident in physical medicine and rehabilitation faces a new challenge. The size and the complexity of the specialty may at first seem overwhelming. Therefore, an organized approach to learning is essential. This syllabus attempts to provide the resident with a framework for learning, and the essential information needed during the training program.

Program Structure

The program in Physical Medicine and Rehabilitation is a four year residency program (48 m). Due to the nature of the specialty, the resident rotates in different specialties. The resident will have to pass all the required rotations as a prerequisite to taking the final exam. If the resident fails any rotation, he will need to repeat for one or two months depending on the decision of his preceptor and program director.
As a consequence, the resident may lose some of his/her elective and vacation time or may need to delay his/her exam. It is important to recognize that the resident engages in rotations in programs which are duly accredited by the Saudi Commission for Health Specialties.

**Required Physical Medicine & Rehabilitation Related Rotations**

- Five months in Internal Medicine, (two months in General and three months selected from the following subspecialties: Geriatrics, Nephrology, Cardiology, Endocrine, Respiratory, Infectious disease, or Intensive care unit)

- Two months in different surgical rotations selected from the following: Otorhinolaryngology, General Surgery, Plastic surgery, Urology

- Three months in Neurology

- Two months in Electromyography and Nerve conduction studies

- Three months in Rheumatology

- Two months in Orthopedics

- One month in Spine Surgery

- One month in Neurosurgery

- One month in Radiology

- One month in Psychiatry

**Required Core Physical Medicine & Rehabilitation Rotations**

- Three months in Stroke Rehabilitation

- Three months in Orthotics/Prosthetics and Amputee Rehabilitation

- Three months in Traumatic Brain Injury Rehabilitation

- Three months in Pediatric Rehabilitation

- Three months in Spinal Cord Injury Rehabilitation

- Two months in Musculoskeletal/Neuromusculoskeletal Disorders

- One month in Cardiac and Respiratory Rehabilitation
- Two months of Research
- Three months of electives (in core rehabilitation rotations)

**Vacation period:** 4 months equivalent or one per academic year

**Specific Standards of Accreditation for a Training Facility:**

Accreditation of a Training Facility is hugely dependent on a number of parameters as defined by the specialty training requirements in physical medicine and rehabilitation. These would pertain to resources which include the following: quality of teaching staff, the number and variety of patients, physical and technical resources, as well as the supporting facilities and services necessary to provide the opportunity for all residents in the program to achieve the educational objectives and receive full training.

In those cases where a hospital has the sufficient resources to provide most of the training in Physical Medicine and Rehabilitation but lacks one or more essential elements, the program may still be accredited provided formal arrangements have been made to send residents to another accredited residency program for periods of appropriate prescribed training.

1. **Teaching staff:** The staff must include sufficient number of consultants in Physical Medicine and Rehabilitation (two at least) and other qualified physicians with an interest in postgraduate clinical training to appropriately supervise residents on all clinical rotations, including all ambulatory care experiences. There must be a sufficient number of physiotherapists, occupational therapists, speech and language pathologists and social workers.

2. **Number and Variety of Patients:** There must be a sufficient number and variety of patients available to allow residents to gain experience in the broad spectrum of clinical practice in the specialty.

3. **Clinical Services specific to Physical Medicine and Rehabilitation**

   The program must include experience in the following areas of the specialty:

   a. Rehabilitation of patients with acquired brain disorders (including traumatic brain injury and stroke).

   b. Rehabilitation of patients with spinal cord disorders (including spinal cord injury).

   c. Rehabilitation of patients with common and complex musculoskeletal disorders including polytrauma and burns, rheumatic disorders and inflammatory joint disease.
d. Diagnosis, management and rehabilitation of patients with peripheral nerve disorders and muscle diseases.

e. Rehabilitation of amputees and the principles of prosthetic and orthotic management.

f. Rehabilitation of the disabled child and adolescent.

g. Diagnosis and comprehensive management of musculoskeletal disorders and pain syndromes.

h. Rehabilitation of patients with cardiopulmonary disorders.

4. Supporting Services Specific to Physical Medicine and Rehabilitation (Clinical, Diagnostic, Technical)

a. Institutions participating in the program must have access to supporting facilities including diagnostic and consulting services (Pathology, Radiology, especially Musculoskeletal and Neuroradiology, Nuclear Medicine, Ultrasonography, and Electrodiagnosis).

b. Adequate and prompt access to emergency support services must be available to all facilities in which training occurs.

c. There must be sufficient number of physiotherapists, occupational therapists, speech and language pathologists, and social workers with adequate facilities, appropriate for the size of that institution and its physical medicine and rehabilitation service. There should be good liaison between the Physical Medicine and Rehabilitation Services and community providers such as home care, geriatric or long term care programs and support groups for the disabled.

d. Ambulatory Care: The program must provide ambulatory care experiences including appropriate clinical space and support resources. Such may be in a traditional hospital outpatient clinic area, or in other settings including a private office. Supervision by an appropriate clinical preceptor must be readily available to the resident for consultation at all times, consistent with the resident's level of training. Timely review of all consultations with the preceptor must occur.

e. Community Learning Experience: All programs should facilitate elective community based rotations. These rotations/experiences may contain any mix of inpatient, ambulatory care and consultation responsibilities occurring outside a tertiary rehabilitation centre or unit.

Admission Criteria to the Training Program

The following are the prerequisites for admission into the Physical Medicine and Rehabilitation training program.
a. The candidate holds a Bachelor Degree in Medicine and Surgery from one of the Saudi
Universities or an accredited university recognized by the Saudi Commission for Health
Specialties.
b. He/she must have successfully completed a year of Internship before the actual start of training.
c. He/she must be of good conduct and medically fit.
d. Candidate has passed the Admission Examination held by the Saudi Commission for Health
Specialties.
e. Candidate is able to provide three recommendation letters from the Consultants or Specialists
with whom he/she has worked confirming his/her ability and capability of training.
f. Candidate must successfully pass the qualifying interview.
g. Candidate must submit a letter of approval from his/her place of work (employer) confirming
permission to join the Specialty Training Program on full time basis for the entire period of
training.
h. Candidate must pass the Basic life support course (BLS), before entering the program.
i. Additional conditions which the Scientific Boards may include which are deemed appropriate.

Registration with the Saudi Commission for Health Specialties

a. After completion of admission procedures by the Committee concerned, the names of trainees
suitable for admission shall be submitted to the Saudi Commission. A trainee shall not be
considered as having been successfully admitted into the training Program except after
registration at The Saudi Commission within a maximum period of two months from the start of
the training year.

b. Every trainee who wishes to continue in the Physical Medicine and Rehabilitation Training
Program must register with The Saudi Commission at the beginning of each training year.

c. It shall not be permissible for a trainee to register in more than one of the Training Programs of
the Saudi Commission at the same time.
d. The trainee shall undertake to abide by all the training laws and rules issued by The Saudi Commission and the Scientific Board of the specialty, and by the laws and programs of the hospital and department in which he/she trains.

e. The trainee or his/her employer shall undertake to pay the training fees prescribed by The Saudi Commission in due time.

a-f. The trainee shall pledge himself/herself to full time commitment to throughout the entire training duration.

g. The trainee is strictly prohibited from working in the Private Sector in his/her free time while in the Training program.

Leaves

a. The trainee is entitled to an annual leave of thirty (30) days in addition to the one (1) day of leave during the Eid. Residents are strongly advised to submit their annual leave request before the beginning of the academic year to facilitate the process of having a master schedule for the rotations of all the residents. If the resident is late in submitting his vacation request and the vacation happens to be during a rotation, then he/she cannot take more than a week of vacation for each month of his rotation.

b. Sick leaves, maternity leaves and exceptional “emergency” leaves for a period not exceeding ninety days shall be compensated for with an equivalent period of days before the trainee is awarded the Certificate of Training Completion.

c. Leaves that are not utilized within the year shall not be carried over to the next year.

d. The Training Program Supervisor may, in coordination with the chairman of the Regional Training Committee, grant the trainee a special leave for scientific purpose not exceeding seven (7) days per training year to attend (scientific conferences or seminars in the same or similar specialty), provided that he/she presents the proof of attendance.

Goals and Objectives of Training

General Objectives:

Upon completion of the educational program, the graduate will be competent to function as a consultant in Physical Medicine and Rehabilitation. Residents must demonstrate the knowledge, skills and attitudes relating to gender, culture and ethnicity pertinent to Physical Medicine and Rehabilitation. In addition, all residents must manifest an ability to incorporate gender, cultural and ethnic perspective in research methodology, data presentation and analysis.
**Specific Objectives:**

The “CanMEDS Roles” framework for core competencies will be followed. CanMEDS is a derivative from “Canadian Medical Education Directives for Specialists”. This framework has been adopted by the Royal College of Physicians of Surgeons of Canada since 1996. The core competencies for the “CanMEDS Roles” include the Roles of Medical Expert (the central role), Communicator, Collaborator, Health Advocate, Manager, Scholar and Professional.

At the completion of training, the resident will have acquired the following competencies and will function effectively as a:

**Medical Expert/Clinical Decision-Maker**

General Requirements:
- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice.
- Demonstrate effective consultation services with respect to patient care, education and medico-legal opinions.

Specific Requirements:
- Demonstrate understanding of basic sciences relevant to the specialty (including but not restricted to: anatomy, physiology, pathology, kinesiology and ergonomics) and the application of basic science principles to clinical care.
- Demonstrate knowledge of clinical features, diagnostic criteria, epidemiology, natural history, pathophysiology, complications and functional consequences of clinical problems commonly encountered in the specialty required to diagnose and manage those problems (including amputations, arthritides, brain injury, cerebrovascular disease, cerebral palsy and other neurologic disorders of childhood, complications of immobility, disability due to cardio respiratory disease, to cancer, diseases of nerve and muscle, disorders of the spinal cord, multiple sclerosis, and musculoskeletal injuries and pain syndromes).
- Describe the approach to diagnosis of neuromusculoskeletal disorders commonly encountered in the specialty, the indications for common diagnostic tests and their interpretation and/or application including: electromyography, nerve conduction studies, x-rays and other imaging tests, blood chemistry, lumbar puncture, exercise stress test, psychometric testing, interventional pain procedures and urodynamics.
- Describe the approach to treatment of patients with neuromusculoskeletal disorders commonly seen in the specialty and select appropriate therapeutic options.
- Perform a relevant physical examination with special emphasis on the assessment of the neuromusculoskeletal system and functional abilities.
- Perform diagnostic and therapeutic procedures as required including: arthrocentesis, intra-articular injections, soft tissue injections, superficial surgical debridement of wounds and intermittent urinary catherization.
- Formulate a comprehensive medical, functional and psychosocial problem list and an appropriate plan for management with consideration of all factors including gender and culture.
- Select and prescribe mobility aids, orthoses, prostheses, exercise programs, physical modalities, rehabilitation therapies and pharmacotherapies.
- Demonstrate and assess transfer techniques, gait, mobility aids, and wheelchair seating.
- Demonstrate understanding of the basic principles of Physical Medicine and Rehabilitation including: the concepts of impairment, activity limitation, participation restriction, and the role of the interdisciplinary team.
- Demonstrate the ability to manage emergent conditions encountered in Physical Medicine and Rehabilitation.

**Communicator**

General Requirements:
- Establish therapeutic relationships with patients and families.
- Obtain and synthesize relevant history from patients/families/communities.
- Listen effectively.
- Discuss appropriate information with patients/families and the health care team.

Specific Requirements:
- Gather the data necessary for diagnosis and treatment of a particular patient through history taking, interviews with family members and review of relevant documentation.
- Communicate clearly, concisely and effectively to patients, families, allied health professionals and other physicians.
- Demonstrates effective conflict resolution skills.
- Demonstrates an ability to prepare complete and informative consultation and medico legal reports in a timely manner.
- Demonstrate a patient centered compassionate and empathetic approach to patients and their families that includes concern for the psychosocial, cultural and economic implications of a patient’s unique situation and disability.

**Collaborator**

General Requirements:
- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.

Specific Requirements:
- Discuss the principles of interdisciplinary team functioning, the special training and unique abilities of its members (such as Physiatrists, other physicians, physiotherapists, occupational therapists, nurses, speech and language pathologists, psychologists, social workers, orthotists prosthetists, and community health care workers) and the special relationship of the patient and family to the team.
- Demonstrate the ability to lead and/or facilitate a rehabilitation team including team and family conferences. Demonstrate the desire to promote autonomy and the involvement of patients and their families in decision-making when dealing with disability.
- Demonstrate understanding and respect for the role of other members of the rehabilitation team and a willingness to deal with differences of opinion in a professional and sensitive manner.

**Manager**

General Requirements:
- Utilize personal resources effectively to balance professional and non-professional activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, life-long learning and other activities.

Specific Requirements:
- Prepare and maintain complete and informative clinical records.
- Discuss the basic principles of management and administration of hospitals, clinical programs, academic institutions and licensing bodies.
- Perform managerial and administrative functions in an efficient and organized fashion.
- Demonstrate knowledge of and participation in quality assurance activities.
- Recognize and discuss the impact of health care economics on patients and their families, residents, medical staff and allied health professionals.

**Health Advocate**

General Requirements:
- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Recognize and respond to those issues where advocacy is appropriate.

Specific Requirements:
- Demonstrate sensitivity to special issues of gender, ethnicity and social bias in dealing with patients, families and persons with disabilities.
- Discuss the role of local and national organizations in shaping public policy on care for persons with disabilities, and the prevention of disability.
- Assist patients and families in accessing health and social resources in the community, including patient support groups.
- Promote a heightened awareness of the challenges and abilities of persons with disabilities.

**Scholar**

General Requirements:
- Develop, implement and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, house staff/students and other health professionals.
- Contribute to development of new knowledge.
Specific Requirements:
- Demonstrate understanding of critical appraisal as applied to review of the rehabilitation literature and basic research methodology.
- Demonstrate basic research skills necessary to develop and evaluate research proposals and complete a research project.
- Demonstrate an ability to incorporate gender, cultural and ethnic perspective in research methodology, data presentation and analysis.
- Teach effectively in a variety of settings and to diverse groups of learners such as students, residents, physicians, allied health professionals, patients, families and the lay public.
- Accurately assess professional and personal strengths and weaknesses and make changes in behavior where necessary.
- Demonstrate a commitment to life-long self-directed learning and the application of new information to clinical practice using the principles of evidence-based medicine.

Professional

General Requirements:
- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with obligations of a physician.

Specific Requirements:
- Demonstrate a commitment to the application of appropriate bioethical standards to clinical practice and research in such areas as truth-telling, consent, advanced directives, confidentiality, end-of-life issues, conflict of interest, resource allocation, and research ethics.
- Display attitudes commonly accepted as essential to professionalism.
- Continually evaluate one’s abilities, knowledge and skills, and know the limitations of professional competence.
- Recognize the principles and effects of a balanced lifestyle on one’s practice and ability to provide optimal care for patients.
- Know and understand the professional, legal and ethical codes to which physicians are bound.
- Analyze and know how to deal with unprofessional behaviors in clinical practice, taking into account local and provincial regulations.

Academic Activities

This will be in the form of a weekly educational half day, in which the resident will be free from regular work duties during the whole year except for the summer months.

The half day will be the same for all the programs so all residents should attend and discuss the topics during those half days.
The half day format is divided into three parts:
- Basic science.
- Clinical skills
- Lecture about a core topic in Physical Medicine & Rehabilitation

**Evaluation, Promotion, Saudi Board Exam (Part I & Part II):**

**Note:** The Saudi Commission for Health Specialties Rules of Procedure for Training will be followed.

**Evaluation**

**End of Rotation Evaluation:**
At the end of each training rotation, the supervising consultant / team shall provide the training committee with a written evaluation of the resident's performance during that period / rotation, as per the approved evaluation form. Periodical Reports shall be submitted to the Regional Supervisory Committees of the Specialty to review and follow-up the trainee progress.

**Promotion:**
The trainee promotion from one level to the next (e.g. R1 to R2), is based on the result of total average of periodical evaluation reports (which shall represent 50%) and the end-of-the year promotion exam (which represents the remaining 50%). The trainee will promoted to the next level if his general average score is equal or above 60%, provided that he does not score less than 50% in any part separately.

**Saudi Board Exam (Part I):**
Residents will be eligible to sit for Part I exam at the end of R1 year. The exam will be held once a year. It will be in the form of short answers and Multiple Choice Questions (MCQs). Part I exam is mandatory for all R2 residents. Saudi Commission for Health Specialties Rules and Regulations for exams apply. Residents who do not pass their first part exam cannot be promoted to the senior level.

Part I exam will test the candidate's knowledge in General Rehabilitation and rehabilitation related topics. (Gait, Pressure sores management, ill effects of immobility, Pediatric milestones & Primitive reflexes, Anatomy, Neuroanatomy, Physiology of bones, muscles and nerves, General Medicine, Geriatrics, Neurology, Neurosurgery, Rheumatology and Orthopedics).
Format of the End of Training Comprehensive Objective Examination in Physical Medicine and Rehabilitation (Specialty Board Exam Part II):

Residents become eligible to sit for the specialty exam (Part II) after successfully finishing all their required rotations and passing Part I exam.

It consists of two parts written and oral (clinical). It will be held according to the general examination rules and regulations for Saudi commission for Health Specialties.

a. Written Component

The written component consists of two papers; each one will have short-answer questions and MCQs. The duration of each paper will be three hours.

b. Oral and Clinical Component

The oral and clinical component is of the objective structured clinical format (multiple stations). Some of the stations will consist of traditional clinical problems encountered in previous examinations (musculoskeletal and neurological examination, interpretation of x-rays, etc.). Standardized patients are often utilized when clinical skills are being evaluated. The following are examples of possible stations:

- rehabilitation goal setting
- joint examination
- musculoskeletal examination
- neurological examination
- functional assessment
- joint injection
- chronic pain
- dictation of discharge summary
- anatomy specimen
- counsel patient and family
- gait deviation
- structured oral (case review)
- dictation of consultation note
- prepare and present a seminar
- x-ray interpretation

Candidates will be asked to demonstrate their competence in areas of clinical practice commonly encountered in Physical Medicine and Rehabilitation.

Standardized patients and others involved with the stations will provide an assessment of the candidate's attitude, approach, style and presentation, that will be taken into consideration in the final pass/fail decision.

Adapted from the Royal College of Physicians, Canada, 2007 (Documents on PMR residency training) web site.

The Saudi specialty Certificate in Physical Medicine and Rehabilitation:

In order to obtain the Saudi Specialty Certificate in Physical Medicine and Rehabilitation shall require the following:

- Successful completion of all the required rotations for the Physical Medicine and Rehabilitation Residency Program; and
- Passing of the final exam (Part II).
References:

Specialty related Journals (the most popular):

- Archives of Physical Medicine and Rehabilitation
- American Journal of Physical Medicine and Rehabilitation
- Pain Medicine
- Pain Physician
- Neuro-Rehabilitation
- Brain
- Cerebrovascular Disease
- Stroke
- Journal of Head Trauma Rehabilitation.
- The Journal of Spinal Cord Medicine
- Clinical Journal of Sport Medicine
- Journal of Sport Rehabilitation
- American Journal of Sports Medicine
- Disability Rehabilitation

Specialty Related Books:

- Physical Medicine and Rehabilitation, (Braddom 3rd edition).
  http://www.braddomtext.com/default.cfm
- Physical Medicine and Rehabilitation: Principles and Practice
  (DeLisa 4th Edition)
- Physical Medicine and Rehabilitation Board Review. (Sara J. Cuccurullo, 2004)
- Grants Atlas of Anatomy
- Illustrated Anatomy of the Head and Neck, (3rd edition, Fehrenbach and Herring)
- Neuroanatomy through Clinical Cases by Blumenfeld
- Neurology and Neurosurgery Illustrated, (3rd edition, Kenneth W. Lindsay)
- Musculoskeletal Examination, 2nd edition, Jeffrey Gross and Joseph Fetto.
- Physical Examination of the Spine and Extremities. (Stanley Hoppenfeld).
- The Mental Status Examination in Neurology, (Strub-Black, 2000).
- Neurological Examination Made Easy, (2nd edition, Fuller).
- Physical Medicine and Rehabilitation (PM&R) Pearls.
- PM and R Secrets
- Neurology Secrets
- Spine Secrets
- Orthopedic Secrets
- Sports Medicine Secrets
- **Rheumatology** Secrets
- EMG Secrets
- Easy EMG
- EMG Pearls
- Electromyography in Clinical Practice, A Case Study Approach (Katirji 1998).
- Brain Injury Medicine, Principles and Practice. (Zasler-Katz-Zafonte, 2007).
- Biostatistics: A Foundation for Analysis in the Health Sciences (W. Daniel, 2005).

**Bibliography:**

Saudi Commission for Health Specialties

Royal College of Physicians and Surgeons in Canada

Australasian Faculty of Rehabilitation Medicine

American Board of Physical Medicine and Rehabilitation

Jordanian Board of Physical Medicine and Rehabilitation