

# ***Rehabilitation Medicine Senior Residency***

## **TRAINING REQUIREMENTS**

### **(A) INTRODUCTION**

Rehabilitation Medicine, also referred to as Physical Medicine and Rehabilitation (PM&R) or physiatry, is a medical specialty concerned with diagnosis, evaluation, and management of persons of all ages with physical and/or cognitive impairments and disability; or whose functions can be improved via PM&R techniques.

Rehabilitation Medicine specialists are trained in the diagnosis and management of impairments, activity limitation and participation restriction as a result of neurologic, musculoskeletal (including sports and occupational aspects) and other diseases 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, vocational and avocational functions in persons whose abilities have been limited by disease, trauma, congenital disorders or pain. Physiatrists function in tertiary hospitals and the community and provide leadership within the healthcare system in directing services for the care of persons with disabilities.

The Rehabilitation Medicine senior residency program is a 36 months program detailed in following sections.

### **(B) PROGRAMME OVERVIEW**

The 36 months senior residency program consists of the following:

- A. Core program of 21 months clinical rotations in Neuro-rehabilitation (12 months), Musculoskeletal rehabilitation (6 months), 3 months of Community Hospital postings
- B. Elective program of 9 months total duration in any of the following clinical rotation: Cardiopulmonary rehabilitation, Neurophysiology study (EMG, NCS), Pain management, Paediatrics rehabilitation, Cancer rehabilitation and Sports medicine. The candidate can also choose to repeat a core Neuro-rehabilitation or Musculoskeletal rehabilitation posting not exceeding 6 months each.
- C. 6 months of Geriatric Medicine / Internal Medicine (*as per mandated by MOH*)

Core experiences to be fulfilled are inpatient and outpatient rehabilitation management of the following diagnostic groups and performance of following rehab procedures:

- Traumatic Brain Injury/ Spinal Cord Injury/ Stroke and other neurological disorders/ chemodenervation procedures for management of spasticity and Urodynamic study
- Fracture/ Polytrauma/ Amputation/ Joint replacements/ Orthotics/ Prosthetics/ Connective Tissue Diseases and Musculoskeletal injections

At the end of the 36 months program the candidate must pass an exit exam consisting of an OSCE and an exit viva; and demonstrates the ability to provide safe and effective care to the individual patient; has the skills, knowledge, and attitudes required to enter the unsupervised practice of rehabilitation medicine; and have established a foundation for continued professional growth.

### **(C) ADMISSION REQUIREMENTS**

The Rehabilitation Medicine senior residency is opened to candidates who has passed the local Internal Medicine junior residency program **or** to residents who have fully exited from the Family Medicine residency, possesses a valid local medical registration and showed an interest to progress to subspecialty training in our senior residency.

### **(D) TRAINING REQUIREMENTS**

The training requirements for the core program (21 months in total) are as follow:

#### Core rotation and minimum duration

<b>Core Rotation</b>	<b>Minimum duration (Months)</b>
Traumatic Brain Injury Rehabilitation	3
Spinal Cord Injury	3
Stroke Rehabilitation and rehabilitation of other neurological disorders	6
Musculoskeletal Rehabilitation	6
Community Hospital and Rehabilitation in the Community	3

#### Clinical and procedural experience

- Takes care of minimum 10 inpatients per week during each core rotation (\*refer to core rotation table in page 2 of the training requirements) so that residents would be exposed to at least a threshold quantum of the varying needs of different rehabilitation inpatients

- Participate in multidisciplinary team meeting once per week
- 1 session per week rehab outpatient clinic managing follow up cases and new cases
- 50 consults (referral from other departments) per year discussed with supervisor
- Botulinum toxin injections for treatment of spasticity, including ultrasound guided injections. A minimum of 15 supervised Botulinum toxin injections of the upper limb and lower limbs, with at least 5 supervised injections in either limb.
- Urodynamic study. A minimum of 6 with reports verified by supervisor.
- Ultrasound guided injection of shoulder and knee joints. A minimum of 10 supervised ultrasound guided injections of the shoulder and knee, with at least 4 supervised injections of the shoulder and knee, respectively.
- Exposure to electrodiagnostic procedures (EMG/ NCS) within duration of SR
- Exposure to diagnostic ultrasound in musculoskeletal disorders
- Trigger point injections. A minimum of 15 supervised injections is needed.

***With these recommended numbers of procedures to be performed, the residents would be expected to be competent in the performance of these procedures. The supervisors are required to sign off on the competency of the residents for in each procedure.***

#### Educational activities

- Minimum 1 structured teaching session per week in any of following format
  - Case presentation
  - Journal club
  - Didactic tutorial
  - Mortality and morbidity round
  - Rehab grand ward round

#### Other training requirements

- Faculty development in teaching
  - Junior doctors
  - Medical students
  - Allied health colleagues and nursing colleagues once per month via lecture
  - Journal club
  - Tutorial

- Bedside teaching

The training requirement for the elective program (9 months in total) as follows:

Rehabilitation Medicine covers a wide spectrum of diseases involving patients from all age groups and a rehab specialist must know how to collaborate with colleagues from other disciplines and specialities. The elective program allows the rehab senior residents such exposure in clinical settings. The senior resident can apply to have attachments to locally recognised specialities (inpatient or outpatient)/clinics providing specialised procedures (as listed in section B, program overview) where under a supervisor, the senior resident may gain exposure to clinically relevant knowledge, skills or attitudes. Each attachment should not exceed 6 months in duration and the senior resident is expected to log in cases/procedures seen countersigned by the attachment supervisor. The senior resident is also allowed to use the elective period for re-exposure to the core neuro or musculoskeletal posting but such attachment should not exceed 6 months each.

## **KEY COMPETENCIES**

The training programme aims to achieve the desired outcomes in the 7 key competencies of patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and system-based practice.

The 7 key competencies identified are:

### **1) Patient Care**

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. To achieve this, residents must have:

- A sufficient variety, depth, and number of clinical experiences. However, clinical activities must not compromise the educational requirements of the training program
- At least 18 months' direct and complete responsibility for inpatient management on the physical medicine and rehabilitation service
- With each year of training, have increasing responsibility in patient care, leadership, teaching and administration. Clinical experiences should allow for progressive responsibility with lesser degrees of supervision as the resident advances and demonstrates additional competencies. The program director must establish written guidelines for supervision of more junior residents by more senior residents when this occurs and of all residents by attending physicians with attention to the acuity, complexity and severity of patient illness. Supervision must include faculty review of a clearly written patient history and physical examination and a meaningful continuous

record of the patient's illness, background, management strategies, as well as lucid presentations of the case summary

- Develop the attitudes and psychomotor skills required to:
  - a) Modify history-taking technique to include data critical to the recognition of functional abilities, and physical and psychosocial impairments which may cause functional disabilities
  - b) Perform the general and specific psychiatric examinations, including procedures common to the practice of physical medicine and rehabilitation
  - c) Make sound clinical judgments
  - d) Design and monitor rehabilitation treatment programs to minimize and prevent impairment and maximize functional abilities
  - e) Prevent injury, illness and disability
- Attain competence in the following areas:
  - a) History and physical examination pertinent to physical medicine and rehabilitation
  - b) Assessment of neurological, musculoskeletal and cardiovascular-pulmonary systems
  - c) Assessment of disability and impairment and familiarity with the ratings of disability and impairment
  - d) Data gathering and interpreting of psychosocial and vocational factors
  - e) Therapeutic and diagnostic injection techniques
  - f) Prescriptions for orthotics, prosthetics, wheelchairs and ambulatory devices, special beds and other assistive devices
  - g) Written prescriptions with specific details appropriate to the patient for therapeutic modalities, therapeutic exercises and testing performed by physical therapists, occupational therapists, speech/language pathologists. It is necessary to provide for an understanding and coordination of psychologic and vocational interventions and tests
  - h) Familiarity with the safety, maintenance, as well as the actual use, of medical equipment common to the various therapy areas and laboratories

- i) Geriatric rehabilitation
- Progressive responsibility in diagnosing, assessing, and managing the conditions commonly encountered by the physiatrist in the rehabilitative management of patients of all ages in the following areas:
  - a) Acute and chronic musculoskeletal syndromes including sports and occupational injuries
  - b) Acute and chronic pain management
  - c) Congenital or acquired myopathies, peripheral neuropathies, motor neuron and motor system diseases and other neuromuscular diseases
  - d) Hereditary, developmental and acquired central nervous system disorders, including cerebral palsy, stroke, myelomeningocele, and multiple sclerosis
  - e) Rehabilitative care of traumatic brain injury
  - f) Rehabilitative care of spinal cord trauma and diseases, including management of bladder and bowel dysfunction and pressure ulcer prevention and treatment
  - g) Rehabilitative care of amputations for both congenital and acquired conditions
  - h) Sexual dysfunction common to the physically impaired
  - i) Postfracture care and rehabilitation of postoperative joint arthroplasty
  - j) Experience in evaluation and application of cardiac and pulmonary rehabilitation as related to physiatric responsibilities
  - k) Pulmonary, cardiac, oncologic, infectious, immunosuppressive and other common medical conditions seen in patients with physical disabilities
  - l) Diseases, impairments and functional limitations seen in the geriatric population
  - m) Rheumatologic disorders treated by the physiatrist
  - n) Medical conditioning, reconditioning and fitness
  - o) Tissue disorders such as burns, ulcers and wound care

## 2) Medical Knowledge

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social behavioral sciences, as well as the application of this knowledge to patient care. To achieve this, residents must have:

- Didactic instruction that is well organized, thoughtfully integrated, based on sound educational principles, and carried out and attended on a regularly scheduled basis. It must expose residents to topics appropriate to their level of training. Systematically organized didactic instruction includes a series of lectures by faculty, seminars, assigned reading, journal clubs, and clinical case conferences. Active participation by the faculty in the didactic program is required
- Teaching rounds with faculty at least twice per week. These rounds must include patient contact with those hospitalized in inpatient rehabilitation facilities (IRFs)
- Gain knowledge about the diagnosis, pathogenesis, treatment, prevention, and rehabilitation of those neuromusculoskeletal, neurobehavioral, cardiovascular, pulmonary, and other system disorders common to this specialty in patients of both sexes and all ages
- Education in the principles of bioethics as applied to medical care, and the residents must participate in decision-making involving ethical issues that arise in the diagnosis and management of their patients
- Adequate and systematic instruction in basic sciences relevant to physical medicine and rehabilitation such as anatomy, physiology, pathology and pathophysiology of the neuromusculoskeletal, cardiovascular and pulmonary systems, kinesiology and biomechanics, functional anatomy, electrodiagnostic medicine, fundamental research design and methodologies, and instrumentation related to the field. This instrumentation should pertain to physiologic responses to the various physical modalities and therapeutic exercises, and the procedures commonly employed by physiatry. This instruction should be correlated with clinical training but should, when appropriate, include basic science faculty.
- Review pertinent laboratory and imaging materials for the patient. Opportunity to observe directly and participate in the various therapies in the treatment areas must occur regularly throughout the residency program, including the proper use and function of equipment and tests
- Observe and gain fundamental understanding of orthotics and prosthetics, including fitting and manufacturing, through instruction and arrangements made with appropriate orthotic-prosthetic facilities

- Learn the principles of pharmacology as they relate to the indications for and complications of drugs utilized in physical medicine and rehabilitation

### **3) Practice-based Learning and Improvement**

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Residents are expected to develop skills and habits to be able to meet the following goals:

- Identify strengths, deficiencies, and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
- Use information technology to optimize learning
- Participate in the education of patients, families, students, residents and other health professionals.
- The training program must stress the importance of self-evaluation, continuing medical education, and continued professional development after graduation.

### **4) Interpersonal and Communication Skills**

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Residents are expected to:

- Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds

- Communicate effectively with physicians, other health professionals, and health related agencies
- Work effectively as a member or leader of a health care team or other professional group
- Act in a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records, if applicable
- Develop the necessary written and verbal communication skills essential to the efficient practice of psychiatry
- Have training in counseling of patients and family members, including end of life care
- Have instruction in medical administration and teaching methodology.

## **5) Professionalism**

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

- Compassion, integrity, and respect for others
- Responsiveness to patient needs that supersedes self-interest
- Respect for patient privacy and autonomy
- Accountability to patients, society and the profession
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation
- Participation in community service, professional organizations, or institutional committee activities
- Humanistic qualities that foster the formation of appropriate patient/physician relationships. These qualities include integrity, respect, compassion, professional responsibility, courtesy, sensitivity to patient needs for comfort and encouragement, and an appropriate professional attitude and behavior toward colleagues. The written curriculum must emphasize the importance of humanistic qualities throughout the residency

- A spirit of collegiality and a high standard of moral behavior within the clinical setting in the care of patients, in the education of residents, and in conducting research
- Recognition of the importance of personal, social and cultural factors in the disease process and clinical management

## **6) Systems-based Practice**

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Residents are expected to:

- Work effectively in various healthcare delivery settings and systems including acute, tertiary and community hospital settings.
- Coordinate patient care within the healthcare system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate
- Advocate for quality patient care and optimal patient care systems
- Work in interprofessional teams to enhance patient safety and improve patient care quality
- Participate in identifying system errors and implementing potential systems solutions
- Receive formal instruction regarding the principles, objectives and process of performance improvement and program evaluation, risk management and cost effectiveness in medicine
- Coordinate effectively and efficiently an interdisciplinary team of allied rehabilitation professionals for the maximum benefit of the patient through:
  - a) An understanding of each allied health professional's role
  - b) The ability to write adequately detailed prescriptions based on functional goals for psychiatric management
  - c) The development of management and leadership skills

- Coordinate and participate in the rehabilitation care of patients in the community. Gain fundamental understanding of the services available in the continuum of rehabilitation care in the community and participate in program development, evaluation and quality improvement of rehabilitation services and services for persons living with disabilities in the community. These include rehabilitation at day rehabilitation centres, day activity centres, vocational rehabilitation and employment support programs, schools for persons with multiple disabilities, including deafness and blindness, independent living facilities, day hospitals, home healthcare services and disability sports programs. Residents should be encouraged to interact with healthcare consumer groups, support groups and organizations supporting persons living with disabilities.
- Have experience in the continuing care of patients with long-term disabilities through appropriate follow-up care

## **7) Faculty Development: Residents' Scholarly Activities**

The curriculum must advance residents' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care.

### **1. Residents should participate in scholarly activity**

- a) The curiosity and creativity of all residents must be stimulated. They must be involved in the critical appraisal of current literature.
- b) Residents should have the opportunity to participate in structured, supervised research training. Residents should be encouraged to produce a peer reviewed publication or engage in an in-depth scholarly activity during the residency program. A program director may elect to offer a special research or academic track for selected residents. This may take the form of an elective or research rotation, not to exceed six months, within the 36 months of physical medicine and rehabilitation senior residency training.

### **2. The sponsoring institution and program should allocate adequate educational resources to facilitate resident involvement in scholarly activities.**

## **(E) SUPERVISION AND WORK HOURS OF RESIDENTS**

### **I. Supervision**

All residents will be supervised by a designated supervisor. The ratio of all teaching faculty to residents should be 1:1. The number of core clinical faculty to resident ratio must be no less than 1:2 for internal medicine-related subspecialties. 20% of resident's time must be protected for training.

### **II. Work Hours**

Work hours can be defined as all clinical and academic activities related to residency training. Work hours must be limited to 80 hours per week, averaged over a month, including all on-calls. Residents must be allowed 1 day (i.e. 24 continuous hours) in 7 days free from all clinical administrative and academic responsibilities, averaged over a month. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

In-house call must occur no more frequently than every third night, averaged over a four-week period. No new patients may be seen after 24 hours of continuous duty. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may continue to be on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

Work hours must be reported in the designation system (e.g. New Innovations) and tracked by the Programme Director.

## **(F) ASSESSMENT AND FEEDBACK**

### **I. Log of operative / clinical experience**

All residents are expected to keep a log of their operative / clinical experience in the designated case log system.

### **II. Assessment**

The supervisor's evaluation of the resident should be performed at the end of every rotation using the designated form and then submitted to the RAC for review.

### **III. Feedback**

Residents should perform a yearly evaluation of teaching faculty and the training programme using the designated forms. These forms must be submitted to the RAC and kept absolutely confidential.

### **IV. Evaluation and Examinations**

#### **A) Resident Evaluation**

##### **1. Formative Evaluation**

- a) The faculty must evaluate resident performance in a timely manner during each rotation or similar educational assignment, and document this evaluation at completion of the assignment
- b) The program must:
  - i. Provide objective assessments of competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice
  - ii. Use multiple evaluators (e.g., faculty, peers, patients, self, and other professional staff)
  - iii. Document progressive resident performance improvement appropriate to educational level
  - iv. Provide each resident with documented semiannual evaluation of performance with feedback
- c) The evaluations of resident performance must be accessible for review by the resident, in accordance with institutional policy.
- d) There must be a formal system for evaluation of the clinical competence of residents, together with annual assessment and post-rotation evaluations. The exit examination for final year residents will be an OSCE\* (Objective Structured Clinical Examination) and a VIVA VOCE that will be conducted by the RAC. The OSCE will also serve as the annual assessment for second year residents. For the first year residents, it is under the responsibility of the Sponsoring Institution to ensure that evaluations are done.
- e) In the evaluation process, the resident's rights must be protected by due process procedures. The resident must be provided with the written institutional policy concerning his/her rights and the institution's obligations and rights.
- f) Adequate permanent records of the evaluation and educational counseling process within the training program for each resident must be maintained. Such

records must be available in the resident file and must be accessible to the resident and other authorized personnel.

## **2. Summative Evaluation**

The program director must provide a summative evaluation for each resident upon completion of the program. This evaluation must become part of the resident's permanent record maintained by the institution, and must be accessible for review by the resident in accordance with institutional policy. This evaluation must:

- a) Document the resident's performance during the final period of education
- b) Verify that the resident has demonstrated sufficient competence to enter practice without direct supervision.
- c) Be discussed with the resident
- d) The program must accept responsibility for completion of the resident's training and fulfillment of educational goals and objectives leading to admissibility for registration as a rehabilitation physician with SAB.
- e) All Trainees have to attend the summative evaluation at the end of 3<sup>rd</sup> year.

## **B) Faculty Evaluation**

1. At least annually, the program must evaluate faculty performance as it relates to the educational program.
2. These evaluations should include a review of the faculty's clinical teaching abilities, commitment to the educational program, clinical knowledge, professionalism, and scholarly activities.
3. This evaluation must include at least annual written confidential evaluations by the residents.
4. Where indicated, substantive efforts should be made to correct faculty weaknesses.

## **C) Program Evaluation and Improvement**

1. The program must document formal, systematic evaluation of the curriculum at least annually. The program must monitor and track each of the following areas:
  - a) Resident performance
  - b) Faculty development
  - c) Program quality. Specifically:

- i. Residents and faculty must have the opportunity to evaluate the program confidentially and in writing at least annually
  - ii. The program must use the results of residents' assessments of the program together with other program evaluation results to improve the program.
2. If deficiencies are found, the program should prepare a written plan of action to document initiatives to improve performance in the areas listed in section V.C.1. The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes.

## **(G) CHANGES IN TRAINEESHIP PERIOD AND LEAVE OF ABSENCE**

### **I. Changes in Training Period**

Residency should be continuous. If a training programme is interrupted for any reason whatsoever, the RAC may at its discretion, require the resident to undergo a further period of training in addition to the minimum requirements of the programme or terminate the residency altogether. All residents are required to conform to the residency training plan as approved by the RAC and complete all the exit and training requirements within the maximum candidature.

### **II. Leave Of Absence**

All residents are to comply with the prevailing MOH policy on Leave of Absence.

### **III. Overseas Postings**

Overseas attachment during Senior Residency training is not permitted with the exception of Radiation Oncology and Neurosurgery (*refer to JCST Circular 114/14*).