

# Physical Medicine and Rehabilitation University of Toronto Rotation Specific Goals and Objectives Prosthetics and Orthotics

For this rotation, please FOCUS the evaluation on the following CanMEDs roles: 1) Medical Expert; 2) Collaborator; 3) Scholar

## 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 legal opinion

## Medical Expert

### Definition:

As Medical Experts, **Physiatrists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care. *Medical Expert* is the central physician Role in the CanMEDS framework. The *Physiatrist* is a medical specialist, expert in the comprehensive diagnosis, management and rehabilitation of people of all ages with neuromusculoskeletal disorders and associated disabilities.**

### 1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical and patient-centered medical rehabilitative care

- Demonstrate reliable and conscientious professional conduct in all aspects of patient care
- Recognize the importance of a multi-disciplinary team in the effective management of patients with an amputation
- Recognize the principles and effects of a balanced lifestyle on one's practice and ability to provide optimal care for patients
- Demonstrate the necessary skills required to direct an interdisciplinary amputee rehabilitation team
- Demonstrate an appreciation of the social, economic, and governmental aspects of health care provision as applied to the amputee

### 2. Establish and maintain clinical knowledge, skills and attitudes appropriate to their practice

- Discuss the epidemiology and pathophysiology of amputations
- Describe the early and late complications of amputations including edema, wound care, pain (phantom and neuropathic), psychological adjustment, skin (ulcers, verrucous hyperplasia, contact dermatitis, infection, epidermoid cyst, etc.), joint contractures, bone health

- Describe the levels of amputations and advantages and disadvantages in both upper and lower extremities (Symes, BKA, knee-disarticulation, AKA, transradial, elbow disarticulation, transthumeral, shoulder disarticulation, forequarter)
- List the criteria for fitting transtibial and transfemoral amputees
- Discuss the indications, contraindications, and potential complications of upper extremity prosthetics
- Discuss the indications, contraindications, and potential complications of lower extremity prosthetics including suspension systems, liners, sockets, shin/shank, knee devices, foot and ankle options
- Demonstrate knowledge of spinal and cervical orthoses including:
  - Halo
  - TLSO prefab/custom
  - CASH
  - Jewitt
  - Lumbosacral corset
  - LSO
  - Boston brace
  - Milwaukee
- Demonstrate knowledge of ambulation aids and assistive devices including the following:
  - Wheelchair prescriptions and modifications for amputee
  - Wheelchair components
  - Parts of single point cane (materials and grip), walker, forearm crutches, axillary crutches
  - Gait including reciprocating, non, 3 point gait, swing-to, swing-through, modified 3 point gait, 4 point gait
- Demonstrate knowledge of lower extremity orthotics including the following:
  - Prefab versus custom
  - 3 point pressure system
  - Foot orthotic indications and features (heel cup, arch supports, wedges, pads, cut-outs, etc)
  - Supramalleolar AFO
  - AFO conventional versus thermoplastic customized (advantages and disadvantages)
  - AFO rigid vs. flexible, assist/resist/stop, ground reaction force, patellar tendon bearing, articulated
  - KAFO including knee locking devices and attachments to body
  - HKAFO
  - CTLSHKAFO
  - Reciprocating gait orthosis
- Discuss the indications, contraindications, and potential complications of Pediatric lower limb orthotics including caster cart, standing frame, parapodium, reciprocating gait orthosis
- Discuss the indications, contraindications, and potential complications of upper extremity orthotics (types of orthotics for MSK fractures, tendonitis, osteoarthritis or RA, nerve dysfunction)
- Discuss the indications, contraindications, and potential complications of shoes including components of shoes, common shoe modifications for therapeutic purposes, therapeutic shoes for arthritis and neuropathy (Charcot joint)

- Demonstrate knowledge of congenital amputations, classification, timelines for fitting upper and lower extremity prosthetic devices and Van Ness rotationplasty procedure
- Discuss diabetes management and foot care.
- Recognize the limitations of conservative management and the various surgical options available based on an understanding of anatomy and biomechanics
  - stump revision
  - neuronal surgery

### 3. Perform a complete and appropriate assessment of a patient

- Obtain a relevant and organized physical and functional history
  - pre-operative assessment
  - post-operative assessment
- Perform a relevant and organized physical and functional examination
  - pre-operative assessment
  - post-operative assessment
- Formulate a comprehensive problem list including medical, physical, functional, psychological and socio-economic issues
- Describe normal gait patterns including definitions, determinants of gait, prerequisites for gait, gait cycle, muscles used at different points in the gait cycle and common gait deviations including foot drop, foot slap, circumduction and trendelenberg
- Demonstrate knowledge of gait deviations with prosthesis: BKA and AKA, including prosthetic and non-prosthetic
- Prescribe appropriate medical, physical, occupational, and psychosocial therapy and list and explain their indications, precautions, and contra-indications
  - MEDICAL
    - medications for peripheral vascular disease
    - stump care and hygiene
    - medications for stump and phantom pain
  - PHYSICAL
    - stump shaping/care (e.g. bandaging, shrinkers)
    - therapeutic exercise
    - pain control (e.g. TENS)
    - pre-prosthetic training
    - prosthetic training
    - long-term management
  - OCCUPATIONAL
    - ADL
    - energy conservation
    - vocational (re-)training
    - return to driving
  - PSYCHOLOGICAL
    - personal counselling
    - family counselling

#### **4. Use preventive and therapeutic interventions effectively**

- Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions including:
  - Mobility aids
  - Orthoses
  - Prostheses
- Write an appropriate prosthetic prescription for upper and lower extremity amputees and demonstrate the ability to "check-out" the prosthesis

#### **5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic**

#### **6. Seek appropriate consultation from other health professionals, recognizing the limits of their expertise**

- Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care
- Arrange appropriate follow-up care

### **Communicator**

#### ***Definition:***

***As Communicators, Physiatrists effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.***

#### **1. Develop rapport, trust, and ethical therapeutic relationships with patients and families**

- Recognize that being a good communicator is a core clinical skill for a Prosthetics and Orthotics physiatrist, and that effective physician-patient communication about wound care, compliance and general health can foster patient satisfaction, physician satisfaction, patient adherence and improved clinical outcomes
- Maximize patients' functional outcomes of patients and their care givers that are characterized by understanding, trust, respect, honesty and empathy
- Respect patient confidentiality, privacy and autonomy
- Listen actively to patients and caregivers' concerns, challenges and goals
- Be cognisant of and responsive to nonverbal cues displayed by patients, family members and caregivers
- Gather information about a disease and disabilities, but also about a patient's beliefs, concerns, expectations and illness experience
- Seek out and synthesize relevant information from other sources, such as a patient's family/caregivers and other professionals and review of relevant documentation
- Synthesize the information gathered for the diagnosis and management of particular patient issues

## **2. Convey relevant information and explanations accurately to patients and care givers, colleagues and other professionals**

- Deliver information regarding prosthetic rehabilitation to patients and their care givers, in a humane, respectful, clear, concise and accurate manner so that it is understandable and encourages discussion and participation in decision-making
- Deliver information to colleagues and other health professionals (e.g., physiotherapists, occupational therapists, social workers, nurses, orthotists) in a respectful, clear, concise and accurate manner at rounds, via consults and direct communication to encourage and facilitate inter-professional person-centered collaborative practice
- Recognize biases, including personal, and their impact on patient care and long term functional outcomes

## **3. Develop a common understanding on issues, problems and plans with patients, care givers, and other professionals to develop a shared plan of care**

- Identify and explore problems to be addressed from a patient encounter effectively, including the patient's context, responses, concerns, and preferences
- Respect diversity and differences, including, but not limited to the impact of gender, religion and cultural beliefs on decision-making
- Encourage discussion, questions, and interaction in the inpatient and outpatient settings
- Engage patients, care givers, and relevant health professionals in shared decision-making to develop a plan of care and promote patient autonomy.
- Address challenging communication issues effectively, such as obtaining informed consent, delivering bad news regarding driving assessment and functional outcomes, and addressing anger, confusion and misunderstanding in prosthetics management

## **4. Convey effective oral and written information about a medical encounter**

- Prepare and maintain clear, complete, accurate, and appropriate records of clinical encounters and plans
  - Prepare complete and informative consultations, and progress reports in a timely manner (i.e., full consult in one hour, follow-ups in 20 minutes, and progress notes in 10 minutes)
- Present verbal reports of clinical encounters that include history of present illness and relevant clinical issues, past medical history, medications, functional and social challenges, impression and plan
- Present medical information effectively to the colleagues and allied professionals about medical issues at Physiatry rounds

## **Collaborator**

### ***Definition:***

**As Collaborators, Physiatrists effectively work within a health care team to achieve optimal patient care.**

## **1. Participate effectively and appropriately in an interprofessional health care team**

- Discuss the principles of interdisciplinary team functioning unique abilities of its members (including but not exclusive to Psychiatrists, 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
- Work with others to assess, plan and provide integrated care for patients with amputations
- Participate in interprofessional team meetings, family conferences and discharge planning conferences
- Respect team ethics, including confidentiality, resource allocation and professionalism
- Demonstrate the ability to lead and/or facilitate a rehabilitation team including team and family conferences

## **2. Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict**

- Demonstrate a mutual respectful attitude towards other colleagues and members of an interprofessional team (for example, communication on a regular basis)
- Work with other professionals to prevent escalation of conflicts
- Employ collaborative negotiation to resolve conflicts

## **Manager**

### ***Definition:***

***As Managers, Psychiatrists are integral participants in health care organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the health care system.***

## **1. Participate in activities that contribute to the effectiveness of their health care organizations and systems**

- Work collaboratively with others in their organizations
- Describe the structure and function of the health care system as it relates to Psychiatry and the role of the Psychiatrist, including the management and administration of hospitals (that is, assessing appropriate referrals), clinical programs, and licensing bodies (that is, completing the Ministry Of Transportation report)
- Describe the structure and function of the health care system as it relates to patients with functional impairments, activity limitation and/or participation restriction, their community support and advocate groups
- Recognize and discuss the impact of health care economics on patients and their families, residents, medical staff and allied health professionals

## **2. Manage their practice and career effectively**

- Set priorities and manage time to balance patient care, practice requirements, outside activities and personal life
- Employ information technology (i.e., EPR system) appropriately for patient care

### **3. Allocate finite health care resources appropriately**

- Recognize the importance of just allocation of health care resources, balancing effectiveness, efficiency and access with optimal patient care for individuals with amputations
- Apply evidence and management processes for cost-appropriate care individualized to patients regarding their prostheses and orthoses
- Recognize and discuss the impact of health care economics on patients and their families, residents, medical staff and other health professionals

### **4. Serve in administration and leadership roles, as appropriate**

- Perform managerial and administrative functions in an efficient and organized fashion

## **Health Advocate**

### ***Definition:***

***As Health Advocates, Physiatrists responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.***

### **1. Respond to individual patient health needs and issues as part of patient care**

- Identify the health needs of an individual with an amputation
  - Assist patients and families in accessing health and social resources in the community, including patient support groups
  - Demonstrate sensitivity to special issues of gender, ethnicity and social bias in dealing with patients, families and persons with disabilities
- Identify opportunities for advocacy, health promotion and disease prevention to individuals with an amputation

### **2. Respond to the health needs of the communities that they serve**

- Describe the practice communities that Prosthetics and Orthotics physiatrists serve
- Identify opportunities for advocacy, health promotion and disease prevention in the communities that they serve, and respond appropriately
- Appreciate the possibility of competing interests between the communities served and manufactures

### **3. Identify the determinants of health for the populations that they serve**

- Identify the determinants of health of persons with amputations, including barriers to access care and resources
- Identify vulnerable or marginalized populations within those served and respond appropriately

- Identify and respond appropriately to issues of gender, ethnicity and social bias in dealing with persons with an amputation

#### **4. Promote the health of individual patients, communities, and populations**

- Describe how public policy impacts on the health of the populations served
- Identify points of influence in the health care system
- Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity and idealism
- Appreciate the possibility of conflict inherent in their role as a health advocate for a patient or community with that of manager or gatekeeper
- Describe the role of the medical profession in advocating collectively for health and patient safety

### **Scholar**

#### ***Definition:***

***As Scholars, Physiatrists demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge.***

#### **1. Maintain and enhance professional activities through ongoing learning**

- Describe the principles of maintenance of competence (through Physiatry presentations)
- Recognize and reflect learning issues in practice (through Physiatry rounds)
- Pose an appropriate learning question (through Physiatry rounds)
- Access and interpret the relevant evidence
- Integrate new learning into practice
- Document the learning process (through gradual increased responsibilities)

#### **2. Evaluate medical information and its sources critically, and apply this appropriately to practice decisions**

- Describe the principles of critical appraisal as applied to Physical Medicine & Rehabilitation and related literature (through presentation)
- Critically appraise retrieved evidence in order to address a clinical question
- Integrate critical appraisal conclusions into clinical care thereby demonstrating a commitment to lifelong learning

#### **3. Facilitate the learning of patients, families, students, residents, other health professionals, the public and others, as appropriate**

- Demonstrate the ability to facilitate learning using a variety of teaching methods (for example, presentation/lecture, bedside teaching and small group interactive teaching)
- Assess and reflect on a teaching encounter
- Receive and provide feedback effectively



## **Professional**

### ***Definition:***

**As *Professionals*, Physiatrists are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour.**

### **1. Demonstrate a commitment to their patients, profession, and society through ethical practice**

- Exhibit appropriate professional behaviours in practice, including honesty, integrity, commitment, compassion, respect and altruism
- Demonstrate a commitment to delivering the highest quality care and maintenance of competence
- Maintain appropriate relations with patients

### **2. Demonstrate a commitment to their patients, profession and society through participation in profession-led regulation**

- Demonstrate knowledge and an understanding of the professional, legal and ethical codes of practice to which physicians are bound

### **3. Demonstrate a commitment to physician health and sustainable practice**

- Balance personal and professional priorities to ensure personal health, to ensure a sustainable practice and to optimize patient care