



الهيئة السعودية للتخصصات الصحية  
Saudi Commission for Health Specialties

# LYMPHOMAS AND PLASMA CELL DISORDERS FELLOWSHIP



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## II. COPYRIGHT STATEMENT

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# IV. INTRODUCTION

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## 1. Context of practice

Lymphomas and plasma cell disorders (PCDs) are the most common lymphoproliferative malignant disorders in Saudi Arabia, affecting both the young and elderly (*World Health Organization (WHO) 2014 cancer country profile, Saudi cancer registry 2015*). With an increase in the number of new cases, there is increasing demand for comprehensive treatment, including advanced therapies.

In adult hematology/oncology practice, hundreds of individuals are diagnosed with lymphomas and PCDs each year. Most tertiary centers in Saudi Arabia have all the facilities required to diagnose, manage, and follow-up such cases, including providing both autologous and allogeneic hematopoietic stem cell transplantation (HSCT) when needed.

The Adult Hematology/Oncology Fellowship programs are accredited by the Saudi Commission for Health Specialties (SCFHS) and their efforts are directed toward establishing specific training programs that are urgently needed in our country.

This program was developed by the King Faisal Specialist Hospital (KFSH) Dammam Oncology Center; thus, KFSH will become the first training center in the Kingdom, and other centers will start the program after accreditation.

## 2. Policies and procedures

*(Please refer to the SCFHS policies and procedures for the latest version)*

- Each trainee should renew his/her academic registration with the SCFHS at the commencement of training year for the entire duration of the program
- Each trainee should have a valid professional registration throughout the training period
- The trainee may not register with the SCFHS in more than one program simultaneously
- The trainee should abide by the rules and regulations of the training program and examinations issued by the SCFHS, decisions issued by scientific councils or committees, requirements of the specialty curriculum, and regulations of the training center
- The trainee is obliged to pay the fees required by the SCFHS on time
- The trainee must be fully and continuously committed to completing the training for the duration of the program
- During his or her enrollment in the program, the trainee is prohibited from working outside the training centers accredited by the SCFHS for the Saudi Specialty/Fellowship Certificate Program
- The trainee must inform the SCFHS if a change has occurred in his or her sponsor reference and provide a copy of his or her new sponsorship letter

### A. On-call duties:

All fellows are required to complete a minimum of 4-6 on-call duty periods per month, each lasting 24 hours, as a junior attending or third on-call (attached to an on-call consultant).

### B. Description of the fellows' responsibilities:

The fellow should be devoted to enhancing his or her clinical training through the time spent on each rotation.



He or she is expected to practice as a junior attending to a supervising junior colleague. He or she is responsible (under the supervision of a mentor) for the following duties:

1. Obtain the patient's comprehensive history and perform a complete physical examination upon admission, record the patient's assessment, differential diagnosis, and medical problems clearly, and initiate a management plan
2. Discuss the management plan, including investigations and a treatment plan with the trainee's senior and communicate the plan to the nurse assigned to the patient's care
3. Address all patient complaints and concerns, follow-up on the results of investigations daily, record problem-oriented progress notes daily, and update the patient's problem list
4. Perform basic procedures necessary for diagnosis and management
5. Present patients on daily rounds and assign all sick patients to an on-call team
6. Ensure that the following discharge orders are placed in the patient's chart in a timely manner: discharge medications, follow-up appointments, and investigations
7. Ensure a timely and thorough discharge summary
8. Participate in departmental and section-related activities as well as presentation of cases in the morning report, grand rounds, and all educational activities (as described in Section 4.4)
9. Participate in on-call duties according to the rules and regulations of the SCFHS either as a senior fellow or junior attending
10. Follow his or her own patients throughout the fellowship through the longitudinal care clinic (as described in Section 4) of the department under the guidance of the faculty and take advantage of the opportunity to work with the entire faculty in both inpatient and outpatient settings

As trainees gain experience and competence, their responsibilities will increase, and they are expected to become actively involved in teaching junior fellows and other colleagues, in addition to providing patient care.

### **C. Vacation time:**

Fellows are eligible to take off one of the Eid holidays (one week), one week of annual professional leave, and an additional four weeks off.

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## V. ABBREVIATIONS USED IN THIS DOCUMENT

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Table 1

Abbreviation	Description
CSF	Cerebrospinal fluid
CT	Computed tomography
HSCT	Hematopoietic stem cell transplantation
BMT	Bone marrow transplant
FL	Follicular lymphoma
AL	Amyloid light-chain
MCQ	Multiple-choice question
PCD	Plasma cell disorder
PET	Positron emission tomography
POEMS	Polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin change
MALT	Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue
CNS	Central nervous system
IRB	Institutional Review Board

Abbreviation	Description
MRI	Magnetic resonance imaging
H&E	Hematoxylin and eosin
CBL	Clinic-based learning
Mini-CEX	Mini-Clinical Evaluation Exercise
CBD	Case-based Discussion
ITER	In-training evaluation report
FITER	Final in-training evaluation report
CCR	Comprehensive competency report
SOE	Structured oral examinations
CLL	Chronic lymphocytic leukemia
ICML	International Conference on Malignant Lymphoma
NEJM	The New England Journal of Medicine
NCCN	National Comprehensive Cancer Network
WHO	World Health Organization
ESMO	European Society for Medical Oncology
IELSG	International Extranodal Lymphoma Study Group
RCPSC	Royal College of Physicians and Surgeons of Canada
NIH	National Institutes of Health
CITI	Collaborative Institutional Training Initiative
ASH	American Society of Hematology

Abbreviation	Description
KSA	Kingdom of Saudi Arabia
SCFHS	Saudi Commission for Health Specialties

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# VI. PROGRAM STRUCTURE

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## 1. Entry requirements

*(Subject to change according to SCFHS)*

- Recognized medical degree certificate in adult hematology or medical oncology
- Commission for Health Specialties or an equivalent
- License to practice medicine in the Kingdom of Saudi Arabia (KSA)
- Passing score in the admission examination held by the SCFHS/Fellowship Scientific Committee
- Professional classification of senior registrar rank in these subspecialties or a passing score on the final written examination of the Saudi Fellowship Certificate. The subspecialty certificate shall be obtained before sitting for the final examination of the subspecialty
- Medical fitness according to the requirements of the program for which the student is seeking admission
- Three letters of recommendation from previous supervisors
- Curriculum vitae
- Valid identification document
- Three recent photos

## 2. Program period

The Saudi Board Program in combined lymphomas and plasma cell disorders (PCDs) consists of one year of training in plasma cell disorders and lymphomas under full supervision.

The program begins on January 1 each year. The first cohort is expected to begin in January 2024.

### 3. Program rotations

Fellows will rotate through various services and core rotations will be conducted in the primary clinical area, with ancillary services rotations to enhance their knowledge.

There are 13 four-week blocks in the program, including the following:

1. Two blocks of protected research (as described in Section 4.3)
2. Three blocks of inpatient services in lymphomas, plasma cell disorders, and stem cell transplantation unit related to lymphomas and plasma cell disorders (two blocks each in lymphomas and plasma cell disorders and one block in the bone marrow transplant unit)
3. Five blocks in the outpatient clinic for lymphomas and plasma cell disorders were distributed as follows:
  - Two longitudinal fellow clinics, one for lymphoma and the other for plasma cell disorders (these clinics should be conducted throughout the year, not only during outpatient rotation)
  - Weekly half-day clinic supervised by the mentor (lymphoma/PCD consultant)
  - One to two slots for new cases each week, in addition to the follow-up care of existing patients; notes and orders must be cosigned by the consultant.
    - Treatment and chemotherapy clinic: two clinics/week
    - Hematological malignancy long-term follow-up clinic (if available): one clinic/week
    - Stem cell transplant consultation and follow-up care for patients with post-transplant lymphoma/PCD patients: one clinic/week

- Stem cell transplant planning clinics (for apheresis, collection, and infusion): one clinic/week
  - An optional block of external outpatient service (elective rotation in another training center) that can be taken from any of the blocks mentioned above
4. One block of pathology department rotation with a lymphoma/myeloma pathologist
  5. One block of vacation time

**Table 2**

Lymphomas and plasma cell disorders rotations	
Rotation	Duration
Inpatient service in lymphomas, PCDs, and bone marrow transplant	3 blocks
Outpatient service in lymphomas, PCDs, and bone marrow transplant <ul style="list-style-type: none"> <li>• 3 blocks in lymphoma</li> <li>• 2 blocks in PCD</li> </ul>	5 blocks
Pathology rotation with a lymphoma/myeloma pathologist	1 block
Protected research	2 blocks
Elective rotation (during outpatient rotation)	1 block
Scheduled leave	1 block



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# VII. LEARNING AND COMPETENCIES

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## 1. Introduction to learning outcomes and competency-based education

This program focuses on providing advanced clinical training in the management of lymphomas and plasma cell disorders as a combined modality. It is a multi-disciplinary program that includes regular interaction between the departments of adult hematology and stem cell transplantation, pathology, radiation oncology, and palliative care, in addition to psychosocial and allied health services, which provide supplementary support. This program was developed based on the CanMEDS framework and rules.

Our aim is to provide trainees with the highest quality of clinical and research experience and prepare them to serve as medical experts in their chosen fields. The fellows will be involved in planning the care and treatment of patients with all types of lymphoma and plasma cell disorders, which will prepare them to become future leaders and independent investigators in this specialty. Upon completion of the training program, fellows will have achieved competency in the management of lymphomas and plasma cell disorders and will possess an understanding of the basic knowledge, clinical aspects, and skills required in this field of clinical research.

Please refer to the Royal College of Physicians and Surgeons of Canada (2015) in the Appendix

## 2. Core rotations

### A. Outpatient rotation:

#### Objectives:

- Encourage fellows to assess and manage lymphoma and PCD patients independently
- Practice communication with patients and colleagues
- Practice appropriate liaison protocols with other departments
- Advise patients about self-management plans

#### Roles:

- Record the patients' assessments, differential diagnoses, and management plans
- Perform prolonged patient follow-up care under the supervision of the attending consultant
- Monitor the notes and orders of junior residents and fellows
- Discuss the management plans of patients, including investigations, treatment, and referrals to other departments with the consultant
- Discuss the need for specialized procedures with the consultant
- Solicit evidence of clinical signs for junior fellows/residents
- Interpret and discuss laboratory results with junior fellows
- Assess the performance of junior fellows in terms of communication skills, focused history taking, and physical examination

#### Knowledge:

- By the end of training, fellows should have knowledge of the following items:
  - Anatomy of the normal reticuloendothelial system and hematopoietic organs

- Basic physiological aspects of lymphoproliferative disorders
  - Pharmacology, pharmacokinetics, and regulatory mechanisms of chemotherapeutic agents along with their excretion and metabolism, to prevent irreversible side effects from treatment
  - Immunological mechanisms related to lymphoproliferative diseases
  - Optimal utilization of immunosuppressive agents and treatment of infections, including bacterial, viral, fungal, and protozoan infections, and rational utilization of the most effective single or combined therapeutic agents
- By the end of training, the fellows (depending on their program of choice) should have mastered the necessary clinical knowledge for managing various lymphoproliferative diseases (*please refer to Table 5*).
  - By the end of training, the fellows should have mastered the necessary clinical knowledge for ordering and interpreting the following laboratory and radiology investigations:
    1. Complete blood count
    2. Peripheral blood smear
    3. Coagulation profile
    4. Bone marrow aspiration and biopsy for diagnostic and staging purposes
    5. Lymph node biopsy and cytology for diagnostic purposes
    6. Flowcytometry
    7. Cytogenetics and molecular tests for diagnostic and risk-stratification purposes
    8. Cerebrospinal fluid (CSF) analysis for diagnostic and staging purposes
    9. Computed tomography (CT) scan for diagnostic and staging purposes
    10. Positron emission tomography (PET) scan for diagnostic and staging purposes
    11. Magnetic resonance imaging (MRI) for diagnostic and staging purposes

## Skills:

By the end of training, fellows should be able to perform the following:

### Full clinical history-taking, including:

- History of present illness
- Systematic review
- Past medical and surgical history
- Family history
- Psychosocial history
- Drug and food allergies

### Full physical examination, including:

- General examination and vital signs
- Head and neck examination
- Lymphatic system examination
- Chest examination
- Abdomen and pelvis examination
- Foot examination

### Procedures:

- Lumbar puncture and administration of intrathecal chemotherapy
- Bone marrow aspiration and biopsy
- Fat pad aspiration/biopsy

## Attitude:

- Develop effective interactions with physicians in other specialties and subspecialties and paramedical personnel
- Understand the legal and ethical aspects of the practice of hematology and demonstrate compliance with hospital policies and rules governing the practice of medicine in the Kingdom.

- Supervise junior residents and fellows and provide help when necessary
- Treat all people with respect, compassion, and dignity
- Prioritize patient needs over self-interest
- Understand that they are accountable not only to the patient but also to their colleagues and society.
- Believe that the keys to healthcare excellence are a high degree of competency and integrity among physicians and their professional colleagues, respect for the autonomy of patients, shared responsibility, and the ability to respond to the diverse needs of the patients
- Understand that professionalism requires individuals to accept responsibilities and maintain accountability through the maintenance and continuous development of competencies.

## B. Inpatient rotation:

### Objectives:

- Encourage fellows to assess and manage lymphoma and PCD patients independently
- Gain hands-on experience and knowledge of the clinical manifestations, diagnostic modalities, and management of lymphoproliferative disorders
- Practice communication skills with patients and colleagues
- Practice communication skills with the patients' families, and master the ability to break bad news to patients and families with compassion
- Practice appropriate liaison protocols with other departments

### Role:

- Lead daily rounds, supervise other team members, and act as a junior attending under the supervision of the consultant

- Document history and physical examination findings, including complete written databases, problem lists, and focused subjective, objective, assessment-related, and plan-related notes, according to accepted formats
- Generate differential diagnoses appropriate to their level of training
- Review admission notes, discharge summaries, and medical reports
- Develop evidence-based management plans
- Interpret lab investigation results (e.g., imaging and blood tests)
- Consult with professionals from other disciplines
- Communicate effectively, even when breaking bad news to patients and their families
- Provide multidisciplinary care in the management of lymphoproliferative disorders, including effective interaction with nursing staff and other supportive services such as those related to infectious diseases, pulmonology, radiation oncology, surgery, dentistry, palliative care, and social services.
- Write discharge instructions and follow-up plans

#### Knowledge:

- By the end of the training, fellows should have knowledge of the following areas:
  - Anatomy of the normal reticuloendothelial system and hematopoietic organs
  - Basic understanding of the physiological aspects of lymphoproliferative disorders
  - Pharmacology, pharmacokinetics, and regulatory mechanisms of chemotherapeutic agents, and their excretion, and metabolism, with the aim of preventing irreversible side effects from treatment.

- Immunological mechanisms related to lymphoproliferative diseases
  - Optimal utilization of immunosuppressive agents and the treatment of bacterial, viral, fungal, and protozoal infections, and rational utilization of the most effective single or combined therapeutic agents
  - Ability to anticipate and manage emergencies related to malignant lymphoproliferative disorders
- By the end of training, the fellows (depending on their program of choice) should have mastered the necessary clinical knowledge for managing various lymphoproliferative diseases (please refer to Table 5)
  - By the end of training, the fellows should have mastered the necessary clinical knowledge for ordering and interpreting the following laboratory and radiology investigations:
    1. Complete blood count
    2. Peripheral blood smear
    3. Coagulation profile
    4. Bone marrow aspiration and biopsy for diagnostic and staging purposes
    5. Lymph node biopsy and cytology for diagnostic purposes
    6. Flowcytometry
    7. Cytogenetics and molecular tests for diagnostic and risk-stratification purposes
    8. CSF analysis for diagnostic and staging purposes
    9. CT scans for diagnostic and staging purposes
    10. PET scan for diagnostic and staging purposes
    11. MRI for diagnostic and staging purposes

#### **Skills:**

By the end of training, fellows should be able to perform the following:

### Full clinical history-taking, including:

- History of present illness
- Systematic review
- Past medical and surgical history
- Family history
- Psychosocial history
- Drug and food allergies

### Full physical examination, including:

- General examination and vital signs
- Head and neck examination
- Lymphatic system examination
- Chest examination
- Abdomen and pelvis examination
- Foot examination

### Procedures:

- Lumbar puncture and administration of intrathecal chemotherapy
- Bone marrow aspiration and biopsy
- Fat pad aspiration/biopsy

### Attitude:

- Develop effective interactions with physicians in other specialties and subspecialties and paramedical personnel
- Understand the legal and ethical aspects of the practice of hematology and demonstrate compliance with hospital policies and rules governing the practice of medicine in the Kingdom.
- Supervise junior residents and fellows and provide help when necessary
- Treat all people with respect, compassion, and dignity
- Prioritize patient needs over self-interest



- Understand that they are accountable not only to the patient but also to their colleagues and society.
- Believe that the keys to healthcare excellence are a high degree of competency and integrity among physicians and their professional colleagues, respect for the autonomy of patients, shared responsibility, and the ability to respond to the diverse needs of patients
- Understand that professionalism requires individuals to accept responsibilities and maintain accountability through the maintenance and continuous development of competencies

### C. Pathology rotation:

During training, fellows are required to complete a rotation in the histopathology department while being attached to a lymphoma/myeloma pathologist.

The **Objectives** of this rotation are the following:

- Familiarize oneself with the grading and staging systems used for malignant neoplasms
- Learn to obtain pertinent information from the patient's clinical record
- Gain familiarity with the stains used for microscopic sections, including hematoxylin and eosin (H&E) and special stains
- Learn to review histologic slides and arrive at an acceptable differential diagnosis
- Learn to defend differential diagnoses related to microscopy
- Learn to order appropriate ancillary studies, including histochemical, immunohistochemical, molecular, and electron microscopy tests

## D. Bone marrow transplant (BMT) rotation:

### Objectives:

- Recognize the underlying diseases in which allogenic and autologous hematopoietic stem cell transplantation (HSCT) are indicated
- Obtain knowledge regarding various conditioning regimens, including their indications, contraindications, and short- and long-term regimen-related toxicities
- Demonstrate recognition of short- and long-term complications of HSCT and their management
- Master early diagnosis and treatment of veno-occlusive disease of the liver and bacterial, viral, and fungal infections in patients undergoing HSCT
- Understand the principles of transfusion and nutritional support in HSCT, and demonstrate an understanding of the principles of immunobiology and immune reconstitution in HSCT
- Understand and practice stem cell mobilization procedures and guidelines
- Attend to peripheral stem cell collection procedure, and understand and manage the acute toxicities of the procedure

### Attitude:

- Develop effective interactions with physicians in other specialties and subspecialties and paramedical personnel
- Understand the legal and ethical aspects of the practice of hematology and demonstrate compliance with hospital policies and rules governing the practice of medicine in the Kingdom
- Supervise junior residents and fellows and provide help when necessary
- Treat all people with respect, compassion, and dignity
- Prioritize patient needs over self-interest
- Understand that they are accountable not only to the patient but also to their colleagues and society.

- Believe that the keys to healthcare excellence are a high degree of competency and integrity among physicians and their professional colleagues, respect for the autonomy of patients, shared responsibility, and the ability to respond to the diverse needs of the patients
- Understand that professionalism requires individuals to accept responsibilities and maintain accountability through the maintenance and continuous development of competencies

### **E. Elective rotation:**

This is an optional rotation that is completed during outpatient blocks and can be performed within or outside the training institution.

### **F. Research training:**

Each lymphoma/PCD fellow in the training is expected to initiate and complete a minimum of one research project under the supervision of a staff member during the fellowship period. The project can be of any type (after discussing it with the mentor) and may consist of a retrospective clinical study, cross-sectional study, or case-control study.

Fellows are advised to develop proposals for their projects early, preferably during the first few months of the program, to ensure that they have adequate time to complete them. Fellows may also elect to be broadly trained in biostatistics, clinical trials, clinical epidemiology, and ethics. These courses are available free of charge to residents and fellows at various times of the academic year.

1. Collaborative Institutional Training Initiative (CITI) course
2. National Institutes of Health (NIH) Research course
3. Biostatistics course
4. Introduction to research methodology
5. Other courses, which may also be offered throughout the year

Mandatory research requirements at the end of the fellowship:

1. Write a research proposal and submit it to the local Institutional Review Board (IRB) for approval and complete the collection and analysis of data during the year of training
2. Prepare a draft manuscript (full manuscript including methods and results) and submit it for publication in a peer-reviewed journal, preferably before the completion of the fellowship program, although publication may follow program completion
3. Submit and present an abstract at a local or international conference, preferably before program completion, although this may follow the program completion

Table 5

CORE SPECIALTY TOPICS			
Non-Hodgkin's lymphoma	Hodgkin's lymphoma	Plasma cell disorders	Others
<ul style="list-style-type: none"> <li>B cell lymphoma</li> <li>✓ Splenic marginal zone lymphoma</li> <li>✓ Nodal marginal zone lymphoma</li> <li>✓ Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT)</li> <li>✓ Follicular lymphoma (FL)</li> <li>✓ Mantle cell lymphoma</li> <li>✓ Diffuse large B cell lymphoma</li> </ul>	<ul style="list-style-type: none"> <li>✓ Classic Hodgkin's lymphoma</li> <li>✓ Nodular lymphocyte predominant Hodgkin's lymphoma</li> </ul>	<ul style="list-style-type: none"> <li>✓ Monoclonal gammopathy of undetermined significance</li> <li>✓ Symptomatic multiple myeloma</li> <li>✓ Smoldering multiple myeloma amyloid light-chain (AL) amyloidosis</li> <li>✓ Polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin change (POEMS)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Chronic lymphocytic leukemia</li> <li>✓ Hairy cell leukemia</li> </ul>

CORE SPECIALTY TOPICS			
Non-Hodgkin's lymphoma	Hodgkin's lymphoma	Plasma cell disorders	Others
<ul style="list-style-type: none"> <li>✓ T cell/histocyte rich large B cell lymphoma</li> <li>✓ Primary central nervous system (CNS) lymphoma</li> <li>✓ Primary mediastinal large B cell lymphoma</li> <li>✓ Burkitt lymphoma</li> <li>✓ High grade B cell lymphoma</li> <li>✓ T cell lymphoma</li> <li>✓ Mycosis fungoides</li> <li>✓ Sezary syndrome</li> <li>✓ Peripheral T cell lymphoma</li> <li>✓ Anaplastic large cell lymphoma</li> </ul>		<ul style="list-style-type: none"> <li>✓ Waldenstrom macroglobulinemia</li> </ul>	

### 3. Academic activities

#### General principles:

Fellows will have access to all conferences and rounds in hematology and BMT meetings, as well as online research courses.

Lymphoma/PCD fellows-in-training are expected to take the initiative in presenting and leading discussions in weekly activities related to lymphomas and PCDs and actively encourage discussions.

The **objectives** of the academic and educational activities are as follows:

- Present a minimum of three scientific presentations distributed among the journal club, weekly departmental activities, and grand rounds in the oncology center
- Attend a weekly half-day academy or weekly dedicated one-hour discussion with a consultant on specialty topics
- Attend and present at local annual national lymphoma/myeloma meetings
- Attend at least one international myeloma/lymphoma conference during the year (such as at Lugano, myeloma summits, and annual American Society of Hematology (ASH) meetings)

## A. Structured programmatic component

### A1. Academic half-day:

The academic half-day is a weekly teaching session in the field of lymphomas and PCDs. It is scheduled by the program director or fellow-in-training and includes basic science, clinical problem solving, discussions on new journals and studies, clinical guidelines, and challenging case presentations. The speaker can be a fellow-in-training or a lymphoma/PCD consultant from inside or outside the training center.

Protected teaching time and attendance are mandatory for all Lymphoma/PCD Fellowship trainees.

Fellows-in-training can join the academic activities of adult hematology fellows if they do not have scheduled activities.

### A2. Lymphoma and PCD tumor board:

The objective of the weekly lymphoma tumor board is to enhance the quality of care for patients diagnosed with lymphoma and PCD, foster productive interactions between healthcare providers, and educate all participants regarding state-of-the-art diagnosis and management of challenging

lymphoma and PCD cases. The members of this board include physicians from the adult hematology, adult oncology, radiation oncology, histopathology, and nuclear medicine departments.

The lymphoma tumor board is held every Wednesday afternoon, during which the members discuss, on average, 7–12 cases.

The participation of fellows in weekly lymphomatumor board meetings is an opportunity to build self-confidence and promotes the development of their communication/leadership skills.

The objectives of participation are as follows:

- Present a comprehensive history, including previous therapies, with details pertinent to the patient's condition
- Record and present data accurately and objectively
- Moderate the discussions between members
- Suggest various lines of treatment that are evidence-based
- Describe the latest advances and research in the field of lymphomas and PCD
- Identify and explain areas of controversy in the field of lymphomas and PCD

### **A3. BMT meeting:**

HSCT is one of the most significant, widely available, and universally adopted advancements in the treatment of plasma cell disorders and lymphoma.

Most patients with plasma cell disorders and lymphoma receive transplants on an outpatient basis, which is more convenient and cost-effective and carries a lower risk of infectious complications than inpatient treatment.

The BMT meeting is conducted once a week to provide a venue for discussing issues pertaining to bone marrow transplant patients, including pre-transplant

candidates, patients undergoing active transplants, and post-transplant patients.

The participants come from various departments and include transplant specialists, adult hematology physicians, hematology unit nurses, blood bank/apheresis laboratory specialists, hematology coordinators, and social workers.

Fellows-in-training are required to present cases that may pertain to any phase of the transplant process.

The objectives of case presentation are as follows:

- Construct a comprehensive history, conduct a physical examination, and discuss previous therapies with details pertinent to the patient's condition
- Record and present data accurately and objectively
- Formulate a transplant plan (roadmap) and subsequently discuss it with the patient
- Follow the process with the transplant coordinators
- Ensure that the transplant plan is carried out in a timely manner

#### **A4. Hematopathology and morphology rounds:**

This weekly meeting is meant to provide a venue to discuss all patients who have undergone bone marrow aspiration and biopsy. Patients may include those with various hematological diseases and a history of bone marrow transplantation.

Junior staff, either hematology fellows or residents, present the cases for discussion, and the findings of the bone marrow biopsies are presented by hematopathologists.

Lymphoma/PCD fellows-in-training are expected to attend this meeting, with the following objectives:



- Discuss cases that involved bone marrow biopsies and ultimately formulate a management plan
- Improve the ability to report common bone marrow biopsies and peripheral blood smear findings
- Educate junior staff on reading, interpreting, and reporting bone marrow biopsies and peripheral blood smears

#### **A5. Weekly academic activities/journal club:**

Every week, all the hematology department physicians meet for an academic presentation in the field of hematology and stem cell transplantation, which alternates with journal club activities. The presenters include faculty members from the oncology center, external guest speakers, and fellows in the hematology and oncology programs. The lymphoma/PCD fellow-in-training is asked to select topics within the context of the field-in-training for the presentation and is supervised by his or her mentor.

The lymphoma/PCD fellow-in-training or program director selects a new article from a respected journal and forwards it to one of the fellows at least two weeks before the scheduled meeting.

The **objectives** of the academic activity/journal club are as follows:

- Ensure communication of continuously updated information in the fields of hematology and stem cell transplantation
- Promote ongoing professional development
- Share experiences with other attendees
- Disseminate information and conduct debates on best practices
- Ensure that professional practices are evidence-based
- Learn and practice critical appraisal skills
- Provide an enjoyable educational and social occasion

## B. Practice-based component teaching

### B1. Daily round-based learning:

Daily rounds provide a good opportunity to conduct bedside teaching for small groups of fellows (usually those involved in caring for patients).

The objectives are as follows:

- Lead daily rounds, supervise other team members, and act as a junior attending under the supervision of the consultant
- Document patient histories and physical examination findings, including complete written databases, problem lists, and focused subjective and objective assessment-related, and plan-related notes according to the accepted formats
- Generate differential diagnoses appropriate to the fellows' level of training
- Review admission notes, discharge summaries, and medical reports
- Develop evidence-based management plans
- Interpret lab investigation results (such as imaging and blood tests)
- Consult with professionals from other disciplines
- Communicate effectively, including breaking bad news to patients and their families
- Lead multidisciplinary family meetings
- Provide multidisciplinary care in the management of lymphoproliferative disorders, including effective interactions with nursing staff and other supportive services such as those related to infectious diseases, pulmonology, radiation oncology, surgery, dentistry, palliative care, and social services.
- Write discharge instructions and follow-up plans

## **B2. On-call-based learning:**

Plasma cell disorder/lymphoma fellows-in-training are required to perform the following:

- Monitor the admission notes and orders of the residents and fellows and discuss/supervise the implementation of the proposed management plans
- Assess the skill of junior residents and fellows in taking patient histories and conducting physical examinations
- Assist junior residents and fellows in interpreting laboratory investigations and performing bedside diagnostic and therapeutic procedures
- Record concise notes for inpatients at least three times per week while on-call
- Discuss the patient's management plan, including investigations and treatment plans, with the consultant
- Communicate the plan to the junior fellow/resident assigned to patient care
- Perform the basic procedures necessary for diagnosis and management

## **B3. Clinic-based learning (CBL):**

Fellows are strictly prohibited from covering outpatient clinics without supervision, and are required to do the following:

- Record patients' assessments, differential diagnoses, and management plans
- Conduct prolonged patient follow-up care under the supervision of the attending consultant
- Monitor the notes and orders of junior residents and fellows
- Discuss the patients' management plans, including investigations, treatment, and referral to other disciplines, with the consultant
- Discuss the need for specialized procedures with the consultant
- Solicit evidence of clinical signs for junior fellows/residents
- Interpret and discuss laboratory results with junior fellows

- Assess the performance of junior fellows in terms of communication skills, focused history taking, and physical examination

#### Fellows' longitudinal clinics:

- Each fellow in the training program should attend two longitudinal clinics per week for the entire training period
- The patients will be registered under the fellow's name, and he or she will be listed as the main physician

The **objectives** of this clinic are as follows:

- Encourage fellows to assess and manage lymphoma and PCD patients independently
- Practice communication with patients and colleagues
- Practice appropriate liaison protocols with other departments
- Advise patients about self-management plans

## C. Self-directed learning

- Achievement of personal learning goals beyond the essential core curriculum
- Maintenance of personal portfolio (self-assessment, reflective learning, and personal development plans)
- Completion of audit and research projects
- Completion of reading journals
- Attending training programs organized on a regional basis (such as symposia, conferences, and board reviews)

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# VII. ASSESSMENTS OF LEARNING

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## 1. Purpose of assessments

Assessment techniques play a vital role in the success of postgraduate training and can guide trainees and trainers to achieve targeted learning objectives. On the other hand, reliable and valid assessment techniques must provide an excellent means for improvement during training, as this will influence the following aspects of the experience: curriculum development, teaching methods, and the quality of the learning environment. The assessment techniques can serve the following purposes:

### 1.1 Assessment for learning:

Trainers should use information regarding the performance of the trainees to guide their learning and encourage improvement.

### 1.2 Assessment as learning:

The assessment criteria should drive the trainees' learning.

### 1.3 Assessment of learning:

Assessment outcomes should represent quality metrics that can improve the learning experience.

For the sake of organization, assessment techniques are further classified into two main categories: *formative* and *summative*.

## 2. Formative assessments

### General principles:

Trainees, as adult learners, should strive to respond to feedback throughout their journey of competency from the “novice” to “master” levels. Formative assessment (also referred to as “continuous assessment”) is the component of an assessment that is distributed throughout the academic year and aims primarily to provide trainees with effective feedback. Input from the overall formative assessment tools is utilized at the end of the year to make decisions about promoting each trainee from the current level to the next one.

To fulfill the CanMEDS competencies based on end-of-rotation evaluation, the fellow’s performance will be evaluated jointly by the relevant staff members, who will assess the following competencies:

1. Performance of the trainee during daily work
2. Performance and participation in academic activities
3. Performance in 10 to 20 minutes of directly observed trainee-patient interaction (Trainers are encouraged to perform at least one assessment per clinical rotation, preferably near the end of the rotation. Trainers should provide timely and specific feedback to the trainees following each assessment of trainee-patient encounters (Mini Clinical Evaluation Exercise [Mini-CEX] and case-based discussions))
4. Completion of the CanMEDS competencies-based end-of-rotation evaluation form (preferably in electronic format), along with the signatures of the attending consultants, within two weeks of the end of each rotation
5. The program director will discuss the evaluations with the fellows as necessary The evaluation form is submitted to the SCFHS Regional Training Supervisory Committee within four weeks of the end of rotation)
6. Completion of a research activity (*as described in Section VII, Item 2.C*)

## In-training evaluation report (ITER):

In each block, the rotation supervisor completes the fellow's evaluation forms and submits them to the program director. In case of anomalies, the evaluator and program director should hold a formal meeting with the fellow to discuss them and devise a plan to correct them. These meetings are documented on the fellow's electronic evaluation form.

**Table 6**

Learning Domain	Formative Assessment Tools	Important details (such as frequency and specifications related to the tool)
Knowledge	<ul style="list-style-type: none"> <li>Case-based Discussion (CBD)</li> <li>Structured academic activities</li> <li>Mini-CEX</li> </ul>	<ul style="list-style-type: none"> <li>An inquiry structured learning experience utilizing live patient cases to solve or examine a clinical problem. This can be done during clinical rotation/ academic activity</li> <li>Participation in weekly academic and/or departmental activities</li> </ul>
Skills	<ul style="list-style-type: none"> <li>Research activities</li> </ul>	<ul style="list-style-type: none"> <li>Achieve the requirements as described under item VII. 2.F</li> </ul>
Attitude	<ul style="list-style-type: none"> <li>ITER</li> <li>Attendance and participation are recorded on a weekly basis.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluation form to be filled monthly for each rotation by the faculty through One45</li> </ul>

The evaluation of each component will be based on the following equation:

Percentage	< 50%	50–59.4%	60–69.4%	> 70%
Description	Clear fail	Borderline fail	Borderline pass	Clear pass

The candidate must score a minimum of “borderline pass” in all five components.

- In case the candidate scores “borderline failure” in one or two components at most, these scores should not belong to the same area of assessment (for example, both borderline failures should not be in skills component)
- The candidate must have passed all other components and scored a minimum of clear pass in at least two components.

### 3. Summative continuous evaluations

#### General principle:

*Summative* assessment is a component that primarily aims to make informed decisions regarding the competency of trainees. Unlike formative assessment, *summative assessment* does not aim to provide constructive feedback. For further details, please refer to the general bylaws and executive policy of assessment (available online at [www.scfhs.org](http://www.scfhs.org)). To be eligible to sit for the final exams, a trainee should be granted “*Certification of Training-Completion.*”

A summative continuous evaluation report is prepared for each fellow at the end of each academic year and involves oral examinations depending on the program of choice.

#### A. Final in-training evaluation report (FITER)/Comprehensive competency report (CCR)

In addition to the supervising committee’s approval of the completion of clinical requirements, FITER is prepared by the program director for each fellow at the end of their training. This report shall form the basis for obtaining the Certification of Training Completion and qualifying for the final specialty exams.



Table 7

Learning Domain	Summative Assessment Tools	Important details (such as frequency and specifications related to the tool)
Knowledge	Final written exam	<ul style="list-style-type: none"> <li>• End of training written exam (specialty exam)</li> <li>• At least borderline pass</li> </ul>
Skills	Structured oral examinations (SOE)	<ul style="list-style-type: none"> <li>• Pass the final written exam to be eligible</li> <li>• At least borderline pass</li> </ul>
Attitude	FITER	Successfully pass the FITER

The evaluation of each component will be based on the following equation:

Percentage	< 50%	50–59.4%	60–69.4%	> 70%
Description	Clear fail	Borderline fail	Borderline pass	Clear pass

### B. Certification of Training-Completion:

To be eligible for final specialty examinations, each trainee is required to obtain “*Certification of Training-Completion.*”

“Certification of Training-Completion” will be issued and approved by the supervisory committee or its equivalent according to SCFHS policies.

Based on the training bylaws and executive policy (please refer to [www.scfhs.org](http://www.scfhs.org)) trainee will be granted “Certification of Training-Completion” on fulfillment of the following criteria:

1. Successful completion of all training rotations
2. The completion of training requirements (for example research) as outlined in FITER that is approved by the scientific council/committee of specialty
3. Clearance from SCFHS training ensures compliance with tuition payments and the completion of universal topics

### C. Final specialty examination:

The final specialty examination is the summative assessment component that grants trainees the specialty's certification. It has two elements:

1. Final written exam: to be eligible for this exam, trainees are required to have "Certification of Training Completion."
2. Final Objective Structured Clinical Examination (OSCE) clinical/practical : Trainees must pass the final written exam to be eligible for the final OSCE clinical/practical.

Blueprint of the final written and clinical/practical exams is shown below.

Table 8: Final OSCE Blue

DIMENSIONS OF CARE						
DOMAINS FOR INTEGRATED CLINICAL ENCOUNTER		Health, Promotion, and Illness Prevention	Acute	Chronic	Psychological Aspects	Total
	Patient care	1	4	2		7
	Patient Safety and Procedural Skills		1		1	1
	Communication and Interpersonal Skills			1	1	2
	Professional Behaviors					0
	<b>Total Stations</b>	<b>1</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>10</b>

\*Main blueprint framework adapted from the Medical Council of Canada Blueprint Project.

For further details on the final examinations, please refer to the general bylaws and executive policy of the assessment (available online: [www.scfhs.org](http://www.scfhs.org)).

#### D. Certification

A certificate acknowledging training completion will only be issued to the fellow upon successful fulfilment of all program requirements. Candidates passing all components of the final specialty examination are awarded the “Combined Saudi Fellowship in Lymphomas/plasma cell disorders” or “Saudi Fellowship in Lymphomas and plasma cell disorders.”

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## IX. USEFUL REFERENCES

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1. International Conference on Malignant Lymphoma (ICML) Lugano meeting proceedings and publications in the Hematological Oncology journal
2. International myeloma working group publications
3. Chronic lymphocytic leukemia (CLL) international working group publications
4. Relevant articles from scientific journals: The New England Journal of Medicine (NEJM), The Lancet, The Lancet Haematology, Annals of Oncology, Journal of Clinical Oncology, Blood Journal, Leukemia, and Lymphoma.
5. Guidelines: National Comprehensive Cancer Network (NCCN), European Society for Medical Oncology (ESMO), and Saudi lymphoma guidelines
6. American Society of Hematology Self-Assessment Program (ASH-SAP)
7. ASH educational books
8. World Health Organization (WHO) 2016 classification of lymphoid neoplasms
9. International Extranodal Lymphoma Study Group (IELSG)
10. NCCN guidelines:  
[https://www.nccn.org/professionals/physician\\_gls/default.aspx](https://www.nccn.org/professionals/physician_gls/default.aspx)
11. ESMO guidelines: <https://www.esmo.org/guidelines>
12. British Society for Haematology guidelines: <https://b-s-h.org.uk/guidelines/>
13. International Myeloma Foundation: <https://www.myeloma.org/>
14. ASH guidelines: <https://www.hematology.org/education>
15. Mayo Clinic guidelines for multiple myeloma (MM):  
<https://www.msmart.org/mm-treatment-guidelines>

16. ICML guidelines: <http://www.lymphcon.ch/icml/website/online-resources.html>



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# APPENDIX

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## End-of-Rotation Evaluation

ITER

FITER

CanMEDS 2015 Physician Competency Framework. Ottawa: Royal College of Physicians and Surgeons of Canada, 2015

## Medical Expert

### Definition:

As medical experts, physicians integrate all of the CanMEDS roles, applying medical knowledge, clinical skills, and professional attitudes to the provision of patient-centered care; in the CanMEDS framework, the physician's central role is the role of medical expert.

### Description:

Physicians possess a defined body of knowledge, clinical skills, procedural skills, and professional attitudes directed toward effective patient-centered care. They apply these competencies to collect and interpret information, make appropriate clinical decisions, and conduct diagnostic and therapeutic interventions. This is performed within the boundaries of their disciplines, personal expertise, healthcare settings, patient preferences, and patient complaints. Care offered by physicians is characterized by up-to-date, ethical, and resource-efficient clinical practice with effective communication in partnership with patients, other healthcare providers, and the community. The role of medical experts is central to that of physicians, and draws on the competencies included in the roles of communicators, collaborators,

managers, health advocates, scholars, and professionals. As medical experts, physicians integrate all the competent roles, applying medical knowledge, clinical skills, and professional values to provide high-quality and safe patient-centered care. A medical expert plays the central role of a physician and defines the physician's clinical scope of practice.

- ✓ Practice medicine within his or her defined scope of practice and expertise
- ✓ Perform patient-centered clinical assessment and establish a management plan
- ✓ Plan and perform procedures and therapies for the purpose of assessment and/or management
- ✓ Establish plans for ongoing care and, when appropriate, timely consultation
- ✓ Actively contribute as an individual and member of a team providing care for the continuous improvement of healthcare quality and patient safety

#### Elements:

- Integration and application of all CanMEDS roles for patient care
- Core medical knowledge
- Identification of the patient's problem
- Diagnostic reasoning
- Clinical judgment
- Clinical decision-making
- Application of appropriate therapies
- Proficiency in procedural skill
- Humane care
- Application of ethical principles for patient care
- Ability to function as a consultant
- Knowledge of the limits of one's expertise

- Maintenance of competence
- Principles of patient safety and avoidance of adverse events

### Key competencies:

*Physicians can undertake the following:*

1. Function effectively as consultants, integrating all CanMEDS roles to provide optimal, ethical, and patient-centered medical care
2. Establish and maintain clinical knowledge, skills, and attitudes appropriate to practice
3. Perform complete and appropriate assessment of patients
4. Use preventive and therapeutic interventions effectively
5. Demonstrate proficient and appropriate use of diagnostic and therapeutic procedural skills
6. Seek appropriate consultation from other health professionals, recognizing the limits of one's own expertise

### Enabling competencies:

*Physicians can undertake the following:*

1. Function effectively as consultants, integrating all CanMEDS roles to provide optimal, ethical, and patient-centered medical care
  - 1.1. Perform effective consultations, including the presentation of well-documented assessments and recommendations in written and/or verbal form in response to requests from other healthcare professionals
  - 1.2. Demonstrate effective use of all CanMEDS competencies relevant to practice
  - 1.3. Identify and respond appropriately to relevant ethical issues arising in patient care



- 1.4. Prioritize professional duties effectively and appropriately when faced with multiple patients and problems
- 1.5. Demonstrate compassionate patient-centered care
- 1.6. Recognize and respond to the ethical dimensions of medical decision-making
- 1.7. Demonstrate medical expertise in situations other than patient care, such as those involving the provision of expert legal testimony or advice to governments when required
2. Establish and maintain clinical knowledge, skills, and attitudes appropriate to practice
  - 2.1. Apply knowledge of clinical, sociobehavioral, and fundamental biomedical sciences relevant to physician specialties
  - 2.2. Describe the Royal College of Physicians and Surgeons of Canada (RCPSC) framework for competencies relevant to physicians' specialties
  - 2.3. Apply lifelong learning skills relevant to the role of scholar, implement a personal program to remain abreast of current issues, and enhance areas of professional competence
  - 2.4. Contribute to the enhancement of quality care and patient safety in practice by integrating the best evidence and practices available
3. Perform complete and appropriate assessments of patients
  - 3.1. Effectively identify and explore issues requiring attention, including patient preferences and the context of their complaints during patient encounters
  - 3.2. Solicit information that is relevant, concise, and accurate with respect to the patient's complaint and his or her preferences for prevention, health promotion, diagnosis, and/or management
  - 3.3. Perform a focused physical examination that is relevant and accurate for prevention, health promotion, diagnosis, and/or management

- 3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner
- 3.5. Demonstrate effective clinical problem-solving and judgment, including the interpretation of available data and integration of information to generate differential diagnoses and management plans to address patient problems
4. Use preventive and therapeutic interventions effectively
  - 4.1. Implement effective management plans in collaboration with patients and their families
  - 4.2. Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to physician practice
  - 4.3. Ensure that appropriate informed consent is obtained for therapy
  - 4.4. Ensure that patients receive appropriate end-of-life care
5. Demonstrate proficient and appropriate use of diagnostic and therapeutic procedural skills
  - 5.1. Demonstrate effective, appropriate, and timely performance of diagnostic procedures relevant to practice
  - 5.2. Demonstrate effective, appropriate, and timely performance of therapeutic procedures relevant to practice
  - 5.3. Ensure that appropriate informed consent is obtained for procedures
  - 5.4. Demonstrate appropriate documentation and dissemination of information related to the procedures and their outcomes
  - 5.5. Ensure that adequate follow-up care is arranged for the performed procedures
6. Seek appropriate consultation from other health professionals, recognizing the limits of one's own expertise
  - 6.1. Demonstrate insight into the limitations of one's own expertise via self-assessment

- 6.2. Demonstrate effective, appropriate, and timely consultation with another health professional for optimal patient care when required
- 6.3. Arrange appropriate follow-up services for patients and their families

### Communicator:

**Definition:** As communicators, physicians effectively facilitate doctor-patient relationships and dynamic exchanges that occur before, during, and after medical encounters.

**Description:** Physicians enable patient-centered therapeutic communication through shared decision-making and effective dynamic interactions with patients, families, caregivers, fellow professionals, and other stakeholders in healthcare. The competencies required for this role are essential for establishing rapport and trust, formulating diagnoses, delivering information, achieving mutual understanding, and facilitating shared care plans. Poor communication can lead to undesirable outcomes, and effective communication is critical for optimal patient outcomes. The application of these communication competencies and the nature of the doctor-patient relationship vary according to the specialty and type of medical practice.

### Elements:

- Patient-centered approach to communication
- Rapport, trust, and ethics in the doctor-patient relationship
- Therapeutic relationships with patients, their families, and caregivers
- Diverse doctor-patient relationships for various types of medical practice
- Shared decision-making
- Concordance
- Mutual understanding
- Empathy
- Capacity for compassion, trustworthiness, and integrity

- Flexibility in the application of skills
- Interactive processes
- Relational competence in interactions
- Solicitation and synthesis of information for patient care
- Efficiency
- Accuracy
- Provision of effective oral and written information for patient care
- Effective listening skills
- Use of expert verbal and nonverbal communication techniques
- Respect for diversity
- Attention to the psychosocial aspects of illness
- Ability to break bad news with compassion
- Ability to address end-of-life issues
- Disclosure of errors or adverse events
- Informed consent
- Capacity assessment
- Appropriate documentation
- Effective public and media communication when appropriate

### Key competencies:

*Physicians can undertake the following:*

1. Develop rapport, trust, and ethical therapeutic relationships with patients and their families
2. Solicit and synthesize relevant information and the perspectives of patients, their families, colleagues, and other professionals
3. Convey relevant information and explanations to patients, their families, colleagues, and other professionals accurately

4. Develop a common understanding of issues, problems, and plans with patients, their families, colleagues, and other professionals to develop shared care plans
5. Convey effective oral and written information regarding medical encounters

### Enabling competencies:

*Physicians can undertake the following:*

1. Develop rapport, trust, and ethical therapeutic relationships with patients and their families
  - 1.1. Recognize that being a good communicator is a core clinical skill for physicians, and effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence, and improved clinical outcomes
  - 1.2. Establish positive therapeutic relationships characterized by understanding, trust, respect, honesty, and empathy with patients and their families
  - 1.3. Respect patient confidentiality, privacy, and autonomy
  - 1.4. Listen effectively
  - 1.5. Be aware of and responsive to nonverbal cues
  - 1.6. Effectively facilitate structured clinical encounters
2. Solicit and synthesize relevant information and perspectives of patients, their families, colleagues, and other professionals
  - 2.1. Gather information regarding diseases while considering the patients' beliefs, concerns, expectations, and experiences
  - 2.2. Seek out and synthesize relevant information from other sources, such as patients' families, caregivers, and other professionals
3. Convey relevant information and explanations to patients, their families, colleagues, and other professionals accurately

- 3.1. Deliver information to patients, their families, colleagues, and other professionals in a humane manner that is easy to understand and encourage discussion and participation in decision-making
4. Develop a common understanding of issues, problems, and plans with patients, their families, and other professionals to develop shared care plans
  - 4.1. Effectively identify and explore problems that require attention, including the context of the patient's complaint and his/her responses, concerns, and preferences, during patient encounters
  - 4.2. Respect diversity and differences, including but not limited to the impact of gender, religion, and cultural beliefs on decision making
  - 4.3. Encourage discussion, questions, and interaction during encounters
  - 4.4. Engage patients, their families, and relevant healthcare professionals in shared decision-making to develop care plans
  - 4.5. Effectively address challenging communication issues, such as obtaining informed consent, delivering bad news, and addressing anger, confusion, and misunderstandings
5. Convey effective oral and written information regarding medical encounters
  - 5.1. Maintain clear, accurate, and appropriate records (either written or electronic) of clinical encounters and plans
  - 5.2. Present effective verbal reports of clinical encounters and plans
  - 5.3. When appropriate, present relevant medical information regarding medical issues to the public or media

## Collaborator

### Definition:

As collaborators, physicians work effectively within healthcare teams to achieve optimal patient care.

### Description:

Physicians work in partnership with others who are involved in the care of individuals or specific groups of patients. This is increasingly important in modern multi-professional environments in which the goal of patient-centered care is widely shared.

Modern healthcare teams not only include groups of professionals working closely together at a single site, such as ward teams, but also teams with a variety of perspectives and skills in multiple locations. Therefore, it is essential that physicians collaborate effectively with patients, families, and interprofessional teams of expert healthcare professionals to provide optimal care, education, and scholarships.

### Elements:

- Collaborative care, culture, and environment
- Shared decision-making
- Shared knowledge and information
- Delegation
- Effective teams
- Respect for other physicians and members of healthcare teams
- Respect for diversity
- Team dynamics
- Leadership based on patient needs
- Constructive negotiation
- Conflict resolution, management, and prevention
- Organizational structures that facilitate collaboration
- Understanding of roles and responsibilities
- Recognition of one's own roles and limits
- Effective consultation with respect to collaborative dynamics

- Effective collaboration between primary care providers and specialists
- Collaboration with community agencies
- Community in practice
- Inter-professional healthcare
- Multi-professional healthcare
- Desire to learn together
- Sensitivity to gender issues

### Key competencies:

*Physicians can undertake the following:*

1. Participate effectively and appropriately in inter-professional healthcare teams
2. Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflicts.

### Enabling competencies:

*Physicians can undertake the following:*

1. Participate effectively and appropriately in inter-professional healthcare teams
  - 1.1. Describe their roles and responsibilities to other professionals clearly
  - 1.2. Describe the roles and responsibilities of other professionals within the healthcare team
  - 1.3. Recognize and respect the diversity of the roles, responsibilities, and competences of other professionals in relation to their own
  - 1.4. Work with others to assess, plan, provide and integrate care for individual patients (or groups of patients)
  - 1.5. When appropriate, work with others to assess, plan, provide, and review other tasks such as research problems, educational work, program reviews, or administrative responsibilities



- 1.6. Participate in inter-professional team meetings effectively
- 1.7. Enter interdependent relationships with other professionals to provide quality care
- 1.8. Describe the principles of team dynamics
- 1.9. Respect team ethics, including confidentiality, resource allocation, and professionalism
- 1.10. When appropriate, demonstrate leadership in healthcare teams
2. Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflicts
  - 2.1. Demonstrate a respectful attitude toward other colleagues and members of inter-professional teams
  - 2.2. Work with other professionals to prevent conflict
  - 2.3. Employ collaborative negotiation to resolve conflicts
  - 2.4. Respect differences, misunderstandings, and limitations in other professionals
  - 2.5. Recognize one's own differences, misunderstandings, and limitations, which may contribute to interprofessional tension
  - 2.6. Reflect on inter-professional team functioning

## Manager

### Definition:

As managers, physicians are integral participants in healthcare organizations, organizing sustainable practices, making decisions regarding resource allocation, and contributing to the effectiveness of the healthcare system.

### Description:

Physicians interact with their work environments as individuals, members of teams or groups, and participants in the healthcare system at local, regional, and national levels. The ratio of emphasis placed on these three levels varies

depending on the nature of the specialty; however, all specialties explicitly identify management responsibilities as a core requirement for the practice of medicine in their disciplines. Physicians function as managers in everyday activities involving coworkers, resources, and organizational tasks, such as implementing care processes and policies, and balancing their personal lives.

Therefore, physicians should have the ability to prioritize items, execute tasks effectively in collaboration with colleagues, and make systematic choices when allocating scarce healthcare resources. The CanMEDS management role involves the active engagement of all physicians as integral participants in decision-making in the operation of the healthcare system.

### Elements:

- Physicians as active participants in the healthcare system
- Physicians' roles and responsibilities in the healthcare system
- Collaborative decision-making
- Quality assurance and improvement
- Organization, structure, and finances of the healthcare system
- Management of change
- Leadership
- Supervision of others
- Administration
- Consideration of justice, efficiency, and effectiveness in the allocation of finite healthcare resources for optimal patient care
- Budgetary and financial concerns
- Priority-setting
- Practice-management to maintain sustainable practices and physician health
- Health-related human resources
- Time-management

- Physician remuneration options
- Negotiation
- Career development
- Information technology for healthcare
- Effective meetings and committees

### Key competencies:

*Physicians can undertake the following:*

1. Participate in activities that contribute to the effectiveness of healthcare organizations and systems
2. Manage their practices and careers effectively
3. Appropriately allocate finite healthcare resources
4. Serve in administrative and leadership roles as appropriate

### Enabling competencies:

*Physicians can undertake the following:*

1. Participate in activities that contribute to the effectiveness of healthcare organizations and systems
  - 1.1. Work collaboratively with others in organizations
  - 1.2. Participate in systemic quality process evaluations and improvements such as those involving patient safety
  - 1.3. Describe the structure and function of the healthcare system in relation to specialties, including the roles of physicians
  - 1.4. Describe the principles of healthcare finance, including physician remuneration, budgeting, and organizational funding
2. Manage their practices and careers effectively
  - 2.1. Establish priorities and manage time to balance patient care, practice requirements, outside activities, and personal life
  - 2.2. Manage the finances and human resources of their practice

- 2.3. Implement processes to ensure personal practice improvement
- 2.4. Employ information technology appropriately in patient care.
- 3. Allocate finite healthcare resources appropriately
  - 3.1. Recognize the importance of allocating healthcare resources fairly and balancing effectiveness, efficiency, and access to achieve optimal patient care
  - 3.2. Apply evidence and management processes to provide cost-appropriate care
- 4. Serve in administrative and leadership roles as appropriate
  - 4.1. Chair or participate in committees and meetings effectively
  - 4.2. Lead or implement changes in healthcare
  - 4.3. Plan the relevant elements of healthcare delivery (such as work schedules)

## Health Advocate

### Definition:

As health advocates, physicians use their expertise and influence responsibly to improve the health and well-being of patients, communities, and populations.

### Description:

Physicians recognize their duties and abilities to improve the overall health of their patients and the

society they serve. Doctors identify advocacy activities as important for individual patients, patient populations, and communities. Individual patients require physicians to assist them in navigating the healthcare system and accessing appropriate healthcare resources in a timely manner. Communities and societies need the special expertise of physicians to collaboratively identify and address broad health issues and determinants of health. At this level, health advocacy involves efforts to change specific practices and policies on behalf of those served.

Framed in a multilevel manner, health advocacy is an essential and fundamental component of health promotion. Health advocacy is expressed appropriately through both the individual and collective actions of physicians to influence public health and policy.

### Elements:

- Advocacy for individual patients, populations, and communities
- Health promotion and disease prevention
- Determinants of health, including psychological, biological, social, cultural, and economic factors
- Fiduciary duty of care

- The medical profession's role in society
- Responsible use of authority and influence
- Mobilization of resources as required Adaptation of practices, management, and education to the needs of individual patients
- Patient safety
- Principles and implications of health policy
- Interactions with other CanMEDS roles and competencies in advocacy

### Key competencies:

*Physicians can undertake the following:*

1. Respond to the health needs and issues of individual patients as part of patient care
2. Respond to the health needs of the communities they serve
3. Identify the determinants of health in the populations they serve
4. Promote the health of individual patients, communities, and populations

### Enabling competencies:

*Physicians can undertake the following:*

1. Respond to the health needs and issues of individual patients as part of patient care
  - 1.1. Identify the health needs of individual patients
  - 1.2. Identify opportunities for advocacy, health promotion, and disease prevention in individuals for whom care is provided
2. Respond to the health needs of the communities they serve
  - 2.1. Describe the communities they serve in the practice
  - 2.2. Identify opportunities for advocacy, health promotion, and disease prevention in the communities they serve and respond appropriately
  - 2.3. Appreciate the possibility of competing interests between the communities served and other populations

3. Identify the determinants of health for the populations they serve
  - 3.1. Identify the determinants of health in the population, including barriers to accessing care and resources
  - 3.2. Identify vulnerable or marginalized populations within those served and respond appropriately
4. Promote the health of individual patients, communities, and populations
  - 4.1. Describe approaches to implement changes in the determinants of health in the populations served
  - 4.2. Describe how public policy affects the health of the populations served
  - 4.3. Identify points of influence within the healthcare system and its structure
  - 4.4. Describe ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism
  - 4.5. Appreciate the possibility of conflict inherent in the role of health advocate for a patient or community with that of managers or gatekeepers
  - 4.6. Describe the role of the medical profession in collectively advocating for health and patient safety

## Scholar

### Definition:

As scholars, physicians demonstrate a lifelong commitment to reflective learning and the creation, dissemination, application, and translation of medical knowledge.

### Description:

Physicians engage in a lifelong pursuit of mastering their domains of expertise. As learners, they recognize the need to learn continually and model this behavior for others. Through scholarly activities, they contribute to the

creation, dissemination, application, and translation of medical knowledge. As teachers, they facilitate the education of students, patients, colleagues, and others.

### Elements:

- Lifelong learning
- Moral and professional obligation to maintain competence and hold oneself accountable
- Reflection on all aspects of practice
- Self-assessment
- Identification of gaps in knowledge
- Questions regarding effective learning
- Access to information for practice
- Critical appraisal of evidence
- Evidence-based medicine
- Translation of knowledge (evidence) into practice
- Translation of knowledge into professional competence
- Enhancement of professional competence
- Use of a variety of learning methodologies
- Principles of learning
- Role-modeling
- Assessment of learners
- Provision of feedback
- Mentorship
- Teacher-student ethics, power issues, confidentiality, and boundaries
- Willingness to learn together
- Communities of practice
- Research and scientific inquiry



- Research ethics, disclosure, conflicts of interest, human subjects, and industry relations

### Key competencies:

*Physicians can undertake the following:*

1. Maintain and enhance professional activities via ongoing learning
2. Critically evaluate information and its sources and apply this to practice-related decisions appropriately
3. Facilitate learning for patients, their families, students, fellows, other health professionals, the public, and others as appropriate
4. Contribute to the creation, dissemination, application, and translation of new medical knowledge and practices

### Enabling competencies:

*Physicians can undertake the following:*

1. Maintain and enhance professional activities via ongoing learning
  - 1.1. Describe the principles of maintaining competence
  - 1.2. Describe the principles and strategies for implementing a personal knowledge-management system
  - 1.3. Recognize and reflect on learning issues in practice
  - 1.4. Conduct personal practice audits
  - 1.5. Pose an appropriate learning question
  - 1.6. Access and interpret relevant evidence
  - 1.7. Integrate new learning into practice
  - 1.8. Evaluate the impact of changes to practice
  - 1.9. Document the learning process

2. Critically evaluate medical information and its sources and apply them to appropriate practice-related decisions.
  - 2.1. Describe the principles of critical appraisal
  - 2.2. Critically appraise retrieved evidence to address clinical questions
  - 2.3. Integrate critical appraisal conclusions into clinical care
3. Facilitate learning for patients, their families, students, fellows, other health professionals, the public, and others as appropriate
  - 3.1. Describe the principles of learning that are relevant to medical education
  - 3.2. Collaboratively identify the learning needs and desired learning outcomes of others
  - 3.3. Select effective teaching strategies and content to facilitate learning
  - 3.4. Deliver effective lectures and presentations
  - 3.5. Assess and reflect on teaching encounters
  - 3.6. Provide effective feedback
  - 3.7. Describe the principles of ethics with respect to teaching
4. Contribute to the development, dissemination, and translation of new knowledge and practices
  - 4.1. Describe the principles of research and scholarly inquiry
  - 4.2. Describe the principles of research
  - 4.3. Conduct systematic searches for evidence
  - 4.4. Select and apply appropriate methods for addressing questions
  - 4.5. Appropriately disseminate the findings of studies

## Professional

### Definition:

As professionals, physicians are committed to the health and well-being of individuals and society through ethical practices, profession-led regulations, and high personal standards of behavior.

### Description:

Physicians play a unique societal role as professionals who are dedicated to the health and care of others. Their work requires the mastery of a complex body of knowledge, skills, and the art of medicine. As such, the role of a professional is guided by codes of ethics and commitment to clinical competence, embracing appropriate attitudes and behaviors, integrity, altruism, personal well-being, and the promotion of public good within the domain. This commitment forms the basis of a social contract between physicians and society. In return, society grants physicians the privilege of establishing professional-led regulations based on the understanding that they are accountable to those served.

### Elements:

- Altruism
- Integrity and honesty
- Compassion and caring
- Morality and codes of behavior
- Responsibility to society
- Responsibility to the profession, which includes peer-review obligations
- Responsibilities to oneself, including personal care, to better serve others
- Commitment to excellence in clinical practice and mastery of the discipline
- Commitment to the promotion of public good in healthcare
- Accountability to professional regulatory authorities

- Commitment to professional standards
- Bioethical principles and theories
- Medico-legal frameworks that govern practice
- Self-awareness
- Sustainable practice and physician health
- Self-assessment
- Disclosure of errors and adverse events

### Key competencies:

*Physicians can undertake the following:*

1. Demonstrate commitment to patients by applying best practices and adhering to high ethical standards
2. Demonstrate commitment to patients, the profession, and society via participation in establishing profession-led regulations
3. Demonstrate commitment to physician health and sustainable practices

### Enabling competencies:

*Physicians can undertake the following:*

1. Demonstrate commitment to patients by applying best practices and adhering to high ethical standards.
  - 1.1. Exhibit appropriate professional behaviour and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality
  - 1.2. Demonstrate commitment to excellence in all aspects of practice
  - 1.3. Recognize and respond to ethical issues encountered in practice
  - 1.4. Recognize and manage conflicts of interest
  - 1.5. Exhibit professional behaviour in the use of technology-enabled communication

2. Demonstrate commitment to society by recognizing and responding to societal expectations in health care.
  - 2.1. Demonstrate accountability to patients, society, and the profession by responding to societal expectations of physicians.
  - 2.2. Demonstrate commitment to patient safety and quality improvement.
3. Demonstrate commitment to the profession by adhering to standards and participating in physician-led regulation
  - 3.1. Fulfill and adhere to professional and ethical codes, standards of practice, and laws governing practice.
  - 3.2. Recognize and respond to unprofessional and unethical behaviour of physicians and other colleagues in health care
  - 3.3. Participate in peer assessment and standard-setting
4. Demonstrate a commitment to physician health and well-being to foster optimal patient care. Balance personal and professional priorities to ensure personal health and sustainable practices
  - 4.1. Exhibit self-awareness and manage influences on personal well-being and professional performance
  - 4.2. Manage personal and professional demands for a sustainable practice throughout the physician's life cycle
  - 4.3. Promote a culture that recognizes, supports, and responds effectively to colleagues in need

Adapted from Frank JR, Snell L, Sherbino J, editors. CanMEDS 2015 Physician Competency Framework. Ottawa: Royal College of Physicians and Surgeons of Canada, 2015