



الهيئة السعودية للتخصصات الصحية  
Saudi Commission for Health Specialties

# Lymphomas and Plasma Cell Disorders Fellowship



سَبَّحَ لِلَّهِ مَا فِي السَّمَاوَاتِ وَالْأَرْضِ

# CONTRIBUTORS

Prepared and updated by Curriculum  
Scientific Group

Dr. Enas Mutahar  
Dr. Jamila Alfaris  
Dr. Ioannis Apostolidis  
Dr. Hani Al-Hashmi

Supervision by

Dr. Mazen Al Qasmi  
Dr. Faisal Thukair

Reviewed and Approved by

Dr. Ali Assiri

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**Correspondence:** Saudi Commission for Health Specialties P.O. Box: 94656 Postal Code: 11614 Contact Center: 920019393

**E-mail :** [Curricula@scfhs.org.sa](mailto:Curricula@scfhs.org.sa)

**Website:** [www.scfhs.org.sa](http://www.scfhs.org.sa)

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## INTRODUCTION

### 1. Context of practice

Lymphomas and PCDs are considered the most common lymphoproliferative malignant disorders in Saudi Arabia, affecting both the young and elderly (*WHO 2014 cancer country profile, Saudi cancer registry 2015*). The number of new cases is growing, with increasing demands to provide comprehensive treatment, including advanced therapies.

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

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

This program was developed by the KFSH Dammam oncology center; thus, KFSH will become the first training center in the Kingdom.

### 2. Policies and procedures (*please refer to the SCHS policies and procedures for the latest version*)

- Each trainee should renew his/her academic registration with the SCFHS at the commencement of each training year for the full 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 at the same time.
- The trainee shall abide by the rules and regulations of the training program and examinations issued by the SCFHS, the decisions issued by the scientific councils or committees, the requirements of the specialty curriculum, and the 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 of the training centers accredited by the SCFHS for the Saudi Specialty/Fellowship Certificate Program.
- The trainee should 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 7-10 on-call duty periods, each lasting 24 hours, per month as a junior attending or third on-call (attached to an on-call consultant).

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

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

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

1. Obtain a 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 the basic procedures necessary for diagnosis and management.
5. Present patients on daily rounds and assign all sick patients to the 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 the presentation of cases in the morning report, grand rounds, and all educational activities (as described above 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 his or her fellowship through the longitudinal care clinic (as described in Section 4) in 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 will 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 additional four weeks of time off.

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## ABBREVIATIONS USED IN THIS DOCUMENT

**Table 1**

<b>BMT</b>	Bone marrow transplant	<b>MCQ</b>	Multiple-choice question
<b>CSF</b>	Cerebrospinal fluid	<b>PCD</b>	Plasma cell disorder
<b>CT scan</b>	Computed tomography	<b>PET scan</b>	Positron emission tomography
<b>HSCT</b>	Hematopoietic stem cell transplant	<b>POEMS</b>	Polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin change
<b>KFSH</b>	King Fahad Specialist Hospital	<b>SCHS</b>	Saudi Commission for Health Specialties

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## PROGRAM STRUCTURE

### 1. Entry requirements *(subject to change according to SCHS)*

- Recognized medical degree certificate in adult hematology or medical oncology
- Commission for Health Specialties or an equivalent
- License to practice medicine in KSA
- Passing score on 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 provided. The subspecialty certificate shall be obtained before sitting for the final examination of the sub-specialty
- Medical fitness according to the requirements of the program to 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 Lymphomas/Plasma Cell Disorders (PCDs) consists of two years or one year of either plasma cell disorders (PCDs) or lymphomas under full supervision.

The fellow can attend a one-year program in either lymphomas or plasma cell disorders **OR** a two-year program (F1 and F2) in both subspecialties (lymphomas AND PCDs).

The program begins on March 1 each year. The first cohort is expected to begin on March 1, 2021.

### 3. Program rotations:

#### A. Two-year training program rotations:

##### A1. First-year fellows (F1)

During each year of the clinical training program, the fellows rotate through the various services. The 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, which will include the following:

1. Two blocks of protected research (as described in Section 4.3)
2. Three blocks of inpatient service in lymphomas, plasma cell disorders, and the stem cell transplantation unit related to lymphomas and plasma cell disorders (2 blocks each in lymphomas and plasma cell disorders and one block in the bone marrow transplant unit)

- 
3. Five blocks in the outpatient clinic in lymphomas and plasma cell disorders distributed as follows:
    - Longitudinal fellow clinic (this clinic should be conducted throughout the year, not only during outpatient rotation)
      - Weekly half-day clinic supervised by the mentor (lymphoma/PCD consultant)
      - One-two slots for new cases each week, in addition to follow-up care of existing patients; notes and orders must be cosigned by the consultant
    - Treatment and chemotherapy clinic: two clinics/week
    - Hematologic malignancy long-term follow-up clinic (if available): one clinic/week
    - Stem cell transplant consultation and follow-up care for post-transplant lymphoma/ PCD patients: one clinic/week
    - Stem cell transplant planning clinics (for aphaeresis, collection, and infusion): one clinic/week
    - Optional block of external outpatient service (elective rotation in another training center): can be taken from any of the blocks mentioned above
  4. One block pathology department rotation with a lymphoma/myeloma pathologist
  5. One block of vacation time

## **A2. Second-year fellows (F2)**

Thirteen four-week blocks that will include the following:

1. Two blocks of protected research (as described in Section 4.3)
2. Three blocks of inpatient service in lymphomas, plasma cell disorders, and the stem cell transplantation unit related to lymphomas and plasma cell disorders
3. Five blocks in the outpatient clinic in lymphomas and plasma cell disorders, distributed as follows:
  - Longitudinal fellow clinic (this clinic should be conducted throughout the year, not only during outpatient rotation)
    - Weekly half-day clinic supervised by the mentor (lymphoma/PCD consultant)
    - One-two slots for new cases each week, in addition to follow-up care of existing patients; notes and orders must be cosigned by the consultant
  - Treatment and chemotherapy clinic: two clinics/week
  - Hematologic malignancy long-term follow-up clinic (if available): one clinic/ week
  - Stem cell transplant consultation and follow-up care for post-transplant lymphoma/PCD patients: one clinic/week
  - Stem cell transplant planning clinics (for aphaeresis, collection, and infusion): one clinic/week
  - Optional block of external outpatient service (as an elective rotation in another training center): can be taken from any of the blocks mentioned above
4. One block pathology rotation with a lymphoma/myeloma pathologist
5. One block of vacation time

## **B. One-year training program rotations (either lymphomas OR PCDs)**

Rotations will mainly be focused on the field of selected training program, which will consist of thirteen four-week blocks that will include the following:

1. Two blocks of protected research (as described in Section 4.3)
2. Three blocks of inpatient service in either lymphomas or PCDs and the bone marrow transplant unit related to lymphomas and plasma cell disorders

3. Five blocks in the outpatient clinic **with a focus on either lymphomas or PCDs** and distributed as follows:
  - Longitudinal fellow clinic (this clinic should be conducted throughout the year, not only during outpatient rotation)
    - Weekly half-day clinic supervised by the mentor (lymphoma/PCD consultant)
    - One-two slots for new cases each week in addition to follow-up care of existing patients; notes and orders must be cosigned by the consultant
  - Treatment and chemotherapy clinic in either lymphomas or PCDs: two clinics/week
  - Hematologic malignancy long-term follow-up clinic (if available): one clinic/week
  - Stem cell transplant consultation and follow-up care for post-transplant lymphoma or PCD patients: one clinic/ week
  - Stem cell transplant planning clinics in either lymphomas or PCDs (for aphaeresis, collection, and infusion): one clinic/week.
  - Optional block of external outpatient service (as an elective rotation in another training center): can be taken from any of the blocks mentioned above
4. One block pathology rotation with a lymphoma/myeloma pathologist
5. One block of vacation time

**Table 2**

<b>Two-Year Program</b>			
<b>First Year (F1)</b>		<b>Second Year (F2)</b>	
<b>Rotation</b>	<b>Duration</b>	<b>Rotation</b>	<b>Duration</b>
Inpatient service in lymphomas, plasma cell disorders, and bone marrow transplant	3 blocks	Inpatient service in lymphomas, plasma cell disorders, and bone marrow transplant	3 blocks
Outpatient service in lymphomas, plasma cell disorders, and bone marrow transplant	5 blocks	Outpatient service in lymphomas, plasma cell disorders, and bone marrow transplant	5 blocks
Pathology rotation with a lymphoma/myeloma pathologist	1 block	Pathology rotation with a lymphoma/myeloma pathologist	1 block
Protected research	2 blocks	Protected research	2 blocks
Elective rotation (during outpatient rotation)	1 block	Elective rotation (during outpatient rotation)	1 block
Scheduled leave	1 block	Scheduled leave	1 block

**Table 3**

One-Year Program	
Rotation	Duration
Inpatient service in either lymphomas or PCDs and bone marrow transplant	3 blocks
Outpatient service in lymphomas or plasma cell disorders and bone marrow transplant	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

## LEARNING AND COMPETENCIES

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

This program is focused on providing advanced clinical training in the management of lymphomas and plasma cell disorders as a combined modality and 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. The program has been developed based on the Can-Meds framework and rules.

Our aim is to provide our trainees with the highest quality of clinical and research experience and prepare them to serve as medical experts in their chosen fields. Fellows will be involved in planning the care and treatment of patients with all types of lymphomas and plasma cell disorders, which will prepare them to become future leaders and independent investigators in the 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 by 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 skills with patients and colleagues
- Practice appropriate liaison protocols with other departments
- Advise patients about self-management plans

##### Roles

- Record patients' assessments, differential diagnoses, and management plans
- Conduct patient follow-up care under the supervision of the attending consultant for a prolonged period
- Monitor junior residents' and fellows' notes and orders
- Discuss patients' management plans, 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 examinations

### 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, 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 treatment of infections, including bacterial, viral, fungal and protozoal ones, and rational utilization of the most effective single or combined therapeutic agents
- By the end of training, 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, 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 sub-specialties and paramedical personnel
- Understand the legal and ethical aspects of the practice of hematology as well as 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 he or she is accountable not only to the patient but also to his or her 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 patients' autonomy, shared responsibility, and the ability to respond to diverse patients' needs
- 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 in the clinical manifestations, diagnostic modalities, and management of lymphoproliferative disorders
- Practice communication skills with patients and colleagues
- Practice communication skills with family and master the ability to break bad news to patients and families with compassion
- Practice appropriate liaison protocols with other departments

**Role:**

- Lead the daily rounds, provide supervision of 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 the involvement of nursing staff and other supportive services such as those related to infectious diseases, pulmonology, radiation oncology, surgery, dentistry, palliative care, social services, etc.
- Write discharge instructions and follow-up plans

### Knowledge:

- By the end of training, fellows should have the 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, 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 infections, including bacterial, viral, fungal and protozoal ones, 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, 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, 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 sub-specialties 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 he or she is accountable not only to the patient but also to his or her 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 patients' autonomy, shared responsibility, and the ability to respond to diverse patients' needs
- 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 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 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 microscopic tests

## D. BMT rotation:

### Objectives:

- Recognize the underlying diseases in which allogenic and autologous HSCT are indicated
- Obtain knowledge of the 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 understanding the principles of immunobiology and immune reconstitution in HSCT

### Attitude:

- Develop effective interactions with physicians in other specialties and sub-specialties and paramedical personnel
- Understand the legal and ethical aspects of the practice of hematology and demonstrate compliance with the 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 he or she is accountable not only to the patient but also to his or her 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 patients' autonomy, shared responsibility, and the ability to respond to diverse patients' needs
- 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 the outpatient blocks, and it can be done within or outside the training institution.

## F. Research training

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

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

1. CITI course
2. 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 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 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 program completion

**Table 5**

CORE SPECIALTY TOPICS			
Non-Hodgkin's lymphoma	Hodgkin's lymphoma	Plasma cell disorders	Others
<p><b>B cell lymphoma</b></p> <ul style="list-style-type: none"> <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> <li>✓ T cell/histocyte rich large B cell lymphoma</li> <li>✓ Primary CNS lymphoma</li> <li>✓ Primary mediastinal large B cell lymphoma</li> <li>✓ Burkitt lymphoma</li> <li>✓ High grade B cell lymphoma</li> </ul> <p><b>T cell lymphoma</b></p> <ul style="list-style-type: none"> <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>✓ 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</li> <li>✓ AL amyloidosis</li> <li>✓ POEMS</li> <li>✓ Waldenstrom macroglobulinemia</li> </ul>	<ul style="list-style-type: none"> <li>✓ Chronic lymphocytic leukemia</li> <li>✓ Hairy cell leukemia</li> </ul>

### 3. Academic activities

#### General principles

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

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

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

- Present a **minimum of three scientific presentations (per year)** distributed between 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 (e.g., Lugano, myeloma summits, annual ASH meeting)

#### A. Structured-programmatic component:

##### A1. Academic half-day:

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

This is protected teaching time and attendance is mandatory for all Lymphoma/PCD Fellowship trainees.

The fellow-in-training can join the academic activities of adult hematology fellows if he or she has no scheduled activities.

##### A2. Lymphoma tumor board:

The objective of the weekly lymphoma tumor board is to enhance the quality of care for patients diagnosed with lymphoma, foster productive interactions between healthcare providers, and educate all participants about state-of-the-art diagnosis and management of challenging lymphoma 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 conducted every Wednesday afternoon, during which the members discuss, on average, 7-12 cases.

The participation of fellows in the weekly lymphoma tumor board meeting is an opportunity to build their self-confidence and promote the development of their communication/leadership skills.

The objectives of fellows' participation are as follows:

- Present a comprehensive history, including previous therapies with details pertinent to the patient's problem
- 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
- Identify and explain areas of controversy in the field of lymphomas

### **A3. Bone marrow transplant (BMT) meeting**

Hematopoietic stem cell transplantation (HSCT) is one of the most significant, widely available, and universally adopted advancements in the treatment of plasma cell disorders and lymphomas.

Most plasma cell disorder and lymphoma patients 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 on 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, which 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 problem
- 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 is also a weekly meeting, and it is meant to provide a venue to discuss all patients who have undergone a bone marrow aspiration and biopsy. The patients may include those with various hematological diseases and those with a history of bone marrow transplants.

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

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

- 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 how to read, interpret, and report bone marrow biopsies and peripheral blood smears

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

Every week, all hematology department physicians meet for an academic presentation in the field of hematology and stem cell transplantation, which alternates with a journal club activity. The presenters include faculty from within 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 presentation and is supervised by his or her mentor.

The lymphoma/PCD fellow-in-training or the 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 the communication of continuously updated information in the field of hematology and stem cell transplantation
- Promote continuous professional development
- Share experiences with other attendees
- Disseminate information and conduct a debate 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**

The daily rounds are 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 the daily rounds, provide supervision of other team members, and act as a junior attending under the supervision of the consultant
- Document patients' histories and physical examination findings, including complete written databases; problem lists; and focused subjective, 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 (e.g., 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 the involvement of nursing staff and other supportive services such as those related to infectious diseases, pulmonology, radiation oncology, surgery, dentistry, palliative care, social services, etc.
- Write discharge instructions and follow-up plans

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

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

- Monitor residents' and fellows' admission notes and orders and discuss/supervise the implementation of proposed management plans
- Assess junior residents' and fellows' skills 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 a patient's management plan, including investigations and the treatment plan, 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 patient follow-up care under the supervision of the attending consultant for a prolonged period
- Monitor junior residents' and fellows' notes and orders
- Discuss 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 examinations

### **Fellows' longitudinal clinics**

- Each fellow in the training program should have one longitudinal clinic per week for the entire training period.
- The patients will be booked under his or her name, and he or she will be listed as the main responsible physician.
- This clinic will be supervised and run parallel to the clinic of the mentor of the fellow or any other consultant identified by the program director.
- The fellow should attend the clinic even if he or she is performing a different rotation. The training center should provide the necessary regulations to guide fellows in conducting the clinic. The program director of the center or an assigned consultant should be the point of reference for the fellow in case he or she needs assistance or advice, and he or she should monitor the performance of the fellow.

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

- Encourage fellows to assess and manage lymphoma and PCD patients independently
- Practice communication skills 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, personal development plan)
- Completion of audit and research projects
- Completion of reading journals
- Attendance at training programs organized on a regional basis (symposia, conferences, board reviews, etc.)

## ASSESSMENTS OF LEARNING

### 1. Purpose of assessments

Assessment techniques play a vital role in the success of postgraduate training and can guide trainees and trainers to achieve the targeted learning objectives. On the other hand, reliable and valid assessment techniques must provide 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. Assessment techniques can serve the following purposes:

- 1.1. Assessment for learning: Trainers should use information about trainees' performance to guide their learning and encourage improvement.
- 1.2. Assessment as learning: Assessment criteria should drive 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 will be 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 journeys 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 the decision about promoting each trainee from the current level to the next one.

To fulfill the CanMEDS competencies based on the 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 trainee following each assessment of trainee-patient encounters (Mini Clinical Evaluation Exercise [Mini-CEX] and case-based discussions).)
4. Completion of the CanMEDS-based competencies 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 (The program director discusses evaluations with fellows as necessary. The evaluation form is submitted to the SCFHS Regional Training Supervisory Committee within four weeks of the end of the rotation.)
5. Completion of a research activity (*as described in Section VII, Item 2.C*)

**Table 6**

<b>Learning Domain</b>	<b>Formative Assessment Tools</b>	<b>Passing Score</b> <i>{Please check the updated bylaws and policies, which can be accessed online (via the official SCFHS website).}</i>
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>• Structured oral exam (SOE)</li> <li>• End-of-year written exam (local or international)</li> <li>• Structured academic activities</li> </ul>	<ul style="list-style-type: none"> <li>• Achieve at least a borderline passing score in each tool in accordance with the standard-setting method used by the executive administration of assessment</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Research activities</li> </ul>	<ul style="list-style-type: none"> <li>• Achieve at least a borderline passing score in each tool in accordance with the standard-setting method used by the executive administration of assessment</li> </ul>
<b>Attitude</b>	ITER: In-training evaluation report	Successfully pass the FITER

### 3. Summative continuous evaluations

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. In-training evaluation report (ITER):

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

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

In Addition to an ITER, the program director should prepare a FITER for each fellow at the end of the final year of the fellowship program. This can involve the completion of a clinical or oral examination or completion of other academic assignments.

At the conclusion of the rotation, the clinical and/or rotation supervisor must meet with the fellow to provide detailed feedback in connection with his or her ITER. In the case of an unsatisfactory and/or borderline ITER, the details of the fellow's deficiencies should be expressly noted on it and discussed with the fellow

## C. Final exam for one-year Saudi Fellowship training in either lymphomas or PCDs:

The final Saudi Fellowship examination consists of two parts:

### C1. Written examination

This examination assesses the trainee's theoretical knowledge base (including recent advances) and problem-solving capabilities in the adult infectious disease specialty; it is delivered in the MCQ format and is held at least once per year. The number of examination items, eligibility, and passing score are established in accordance with the Commission's training as well as examination rules and regulations. Examination details and a blueprint are available on the Commission's website, [www.scfhs.org.sa](http://www.scfhs.org.sa).

### C2. Structured oral exam (SOE)

This examination assesses whether a fellow has demonstrated a high-level clinical approach, including data-gathering, patient management, and difficult scenarios. The examination is held at the end of the year in the form of patient management problems (PMPs). Eligibility and the passing score are established in accordance with the Commission's training and examination rules and regulations. Examination details and a blueprint are available on the Commission's website, [www.scfhs.org.sa](http://www.scfhs.org.sa).

## D. Final examination for the Combined Saudi Fellowship in Lymphomas/PCDs

The final Saudi Fellowship examination consists of two parts:

### D1. Written examination

This examination assesses the trainee's theoretical knowledge base (including recent advances) and problem-solving capabilities in the adult infectious disease specialty; it is delivered in the MCQ format and is held at least once per year. The number of examination items, eligibility, and passing score are established in accordance with the Commission's training and examination rules and regulations. Examination details and a blueprint are available on the Commission's website, [www.scfhs.org.sa](http://www.scfhs.org.sa).

### D2. Structured oral exam (SOE)

This examination assesses whether a fellow has demonstrated a high-level clinical approach, including data gathering, patient management, and difficult scenarios. The examination is held at the end of the year in the form of patient management problems (PMPs). Eligibility and the passing score are established in accordance with the Commission's training and examination rules and regulations. Examination details and a blueprint are available on the Commission's website, [www.scfhs.org.sa](http://www.scfhs.org.sa).

*The evaluation of each component will be based on the updated bylaws and policies, which can be accessed online ([www.scfhs.org.sa](http://www.scfhs.org.sa)).*

To achieve unconditional promotion, the candidate must score a minimum of "borderline pass" in all five components.

- The program director can still recommend the promotion of candidates if the condition above is not met in some specific situations:

- 
- In case the candidate scored “borderline failure” in one or two components at maximum and these scores do not pertain to the same area of assessment (for example, both borderline failures should not both pertain to skills)
  - If the candidate has achieved passing scores on all other components and has scored a minimum of “clear pass” in at least two components

## E. Certification

A certificate acknowledging training completion will only be issued to the fellow upon successful fulfillment of all program requirements. Candidates passing all components of the final specialty examination are awarded the **“Combined Saudi Fellowship in Lymphomas/PCDs”** or **“Saudi Fellowship in Lymphomas (PCDs).”**

## USEFUL REFERENCES

1. International Conference on Malignant Lymphoma (ICML) Lugano meeting proceedings and publications in the Hematologic Oncology journal
2. International myeloma working group publications
3. CLL international working group publications
4. Relevant articles from scientific journals: NEJM, the Lancet, The Lancet Haematology, Annals of Oncology, Journal of Clinical Oncology Blood journal, Leukemia and Lymphoma
5. Guidelines: NCCN, ESMO, Saudi lymphoma guidelines
6. ASH SAP
7. ASH educational books
8. 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 MM: <https://www.msmart.org/mm-treatment-guidelines>
16. International Conference on Malignant Lymphoma (ICML) guidelines: <http://www.lymphcon.ch/icml/website/online-resources.html>

## APPENDIX

### 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; the role of medical expert is the physician's central role in the CanMEDS framework.

**Description:** Physicians possess a defined body of knowledge, clinical skills, procedural skills, and professional attitudes, which are 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 done within the boundaries of their disciplines, personal expertise, healthcare settings, patients' preferences, and the context of patients' complaints. The care offered by the physician 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 Expert is central to the function of physicians and draws on the competencies included in the roles of Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional. As Medical Experts, physicians integrate all of the competency roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centered care. Medical Expert is the central physician role and defines the physician's clinical scope of practice.

- ✓ Practice medicine within his or her defined scope of practice and expertise
- ✓ Perform a 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 as a member of a team providing care, to the continuous improvement of healthcare quality and patient safety

### Elements:

- Integration and application of all CanMEDS roles for patient care
- Core medical knowledge
- Patient problem identification
- Diagnostic reasoning
- Clinical judgment
- Clinical decision-making
- Application of appropriate therapies
- Procedural skill proficiency
- 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, as required
2. Establish and maintain clinical knowledge, skills, and attitudes appropriate to practice
  - 2.1. Apply knowledge of the clinical, socio-behavioral, and fundamental biomedical sciences relevant to physicians' specialties
  - 2.2. Describe the RCPSC framework for competencies relevant to physicians' specialties
  - 2.3. Apply lifelong learning skills relevant to the role of scholar, implementing 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, 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 the patient's preferences and the context of his or her complaint, during patient encounters
  - 3.2. Solicit information that is relevant, concise, and accurate with respect to the context of the patient's complaint and his or her preferences, for the purposes of prevention, health promotion, diagnosis, and/or management
  - 3.3. Perform a focused physical examination that is relevant and accurate for the purposes of 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 performed and their outcomes
  - 5.5. Ensure that adequate follow-up care is arranged for the procedures performed
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 of another health professional for optimal patient care, as required
  - 6.3. Arrange appropriate follow-up services for patients and their families

## Communicator

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

**Description:** Physicians enable patient-centered therapeutic communication via shared decision-making and effective dynamic interactions with patients, families, caregivers, fellow professionals, and other stakeholders in healthcare. The competencies of this role are essential to the establishment of rapport and trust, formulation of diagnoses, delivery of information, achievement of mutual understanding, and facilitation of shared care plans. Poor communication can lead to undesirable results, 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 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, patients' 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

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- 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, patients' families, colleagues, and other professionals accurately
3. Convey relevant information and explanations to patients, patients' families, colleagues, and other professionals accurately
4. Develop a common understanding of issues, problems, and plans with patients, patients' 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 the perspectives of patients, patients' families, colleagues, and other professionals accurately
  - 2.1. Gather information regarding diseases while considering patients' beliefs, concerns, expectations, and experiences of illness
  - 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, patients' families, colleagues, and other professionals accurately
  - 3.1. Deliver information to patients, patients' families, colleagues, and other professionals in a humane manner that is easy-to-understand and encourages discussion and participation in decision-making
4. Develop a common understanding of issues, problems, and plans with patients, patients' families, and other professionals to develop shared care plans
  - 4.1. Identify and explore problems that require attention, including the context of the patient's complaint and his or her responses, concerns, and preferences, effectively 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, patients' 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 misunderstanding
5. Convey effective oral and written information regarding medical encounters
  - 5.1. Maintain clear, accurate, and appropriate records (e.g., written or electronic) of clinical encounters and plans
  - 5.2. Present verbal reports of clinical encounters and plans effectively
  - 5.3. When appropriate, present medical information regarding medical issues to the public or media effectively

## Collaborator

**Definition:** As Collaborators, physicians work effectively within healthcare teams to achieve optimal patient care.

**Description:** Physicians work in partnership with others who are appropriately 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 a ward team, but also extend to teams with a variety of perspectives and skills in multiple locations. It is, therefore, essential that physicians collaborate effectively with patients, families, and inter-professional teams of expert healthcare professionals to provide optimal care, education, and scholarship.

### 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 inter-professional conflict

**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 inter-professional 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 inter-professional tension
  - 2.6. Reflect on inter-professional team functioning

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## Manager

**Definition:** As Managers, physicians are integral participants in healthcare organizations, organizing sustainable practices, making decisions regarding the allocation of resources, 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 the local, regional, and national levels. The ratio of emphasis placed on these three levels varies depending on the nature of the specialty, but all specialties have explicitly identified management responsibilities as a core requirement of the practice of medicine in their disciplines. Physicians function as managers in everyday-practice activities involving coworkers, resources, and organizational tasks, such as implementing care processes and policies and balancing their personal lives.

Therefore, physicians require the ability to prioritize items, execute tasks in collaboration with colleagues effectively, and make systematic choices when allocating scarce healthcare resources. The CanMEDS management role describes 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. Allocate finite healthcare resources appropriately
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 initiatives
  - 1.3. Describe the structure and function of the healthcare system as it relates 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 their practices' finances and human resources
  - 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 the just allocation of healthcare resources, 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 (e.g., work schedules)

**Health Advocate**

**Definition:** As Health Advocates, physicians use their expertise and influence responsibly to advance the health and wellbeing of individual patients, communities, and populations.

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

Framed in this multilevel manner, health advocacy is an essential and fundamental component of health promotion. Health advocacy is expressed appropriately by 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 individual patients' health needs and issues as part of patient care
2. Respond to the health needs of the communities that they serve
3. Identify the determinants of health in the populations that they serve
4. Promote the health of individual patients, communities, and populations

**Enabling competencies:** *Physicians can undertake the following:*

1. Respond to individual patients' health needs and issues 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 for individuals to whom care is provided
2. Respond to the health needs of the communities that they serve
  - 2.1. Describe the practice communities that they serve
  - 2.2. Identify opportunities for advocacy, health promotion, and disease prevention in the communities that 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 that 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 the implementation of changes to 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 the ethical and professional issues, including altruism, social justice, autonomy, integrity, and idealism, inherent in health advocacy

- 4.5. Appreciate the possibility of conflict inherent in the role of health advocate for a patient or community with that of manager or gatekeeper
- 4.6. Describe the role of the medical profession in collectively advocating for health and patient safety

## Scholar

**Definition:** As Scholars, physicians demonstrate lifelong commitment to reflective learning and the creation, dissemination, application, and translation of medical knowledge.

**Description:** Physicians engage in the lifelong pursuit of mastery of their domains of expertise. As learners, they recognize the need to learn continually and model this behavior for others. Through their 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 in patients, patients' 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 competence maintenance
  - 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 practice-related decisions appropriately
  - 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 in patients, patients' 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 others' 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
  - 4.4. Conduct systematic searches for evidence
  - 4.5. Select and apply appropriate methods for addressing questions
  - 4.6. Appropriately disseminate the findings of studies

**Professional**

**Definition:** As Professionals, physicians are committed to the health and wellbeing of individuals and society via ethical practices, profession-led regulations, and high personal standards of behavior.

**Description:** Physicians have a unique societal role as Professionals 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 a commitment to clinical competence, embracing appropriate attitudes and behaviors, integrity, altruism, personal wellbeing, and the promotion of the public good within the domain. This commitment forms the basis of a social contract between the physician and society. In return, society grants physicians the privilege of establishing profession-led regulations 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 the 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, the profession, and society via ethical practices
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, the profession, and society via ethical practices
  - 1.1. Exhibit appropriate professional behaviors, including honesty, integrity, commitment, compassion, respect, and altruism, in practice
  - 1.2. Demonstrate commitment to delivering the highest quality of care and maintenance of competence
  - 1.3. Recognize and respond appropriately to the ethical issues encountered in practice
  - 1.4. Manage conflicts of interest appropriately
  - 1.5. Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law
  - 1.6. Maintain appropriate relationships with patients
2. Demonstrate commitment to patients, the profession, and society via participation in establishing profession-led regulations
  - 2.1. Appreciate professional, legal, and ethical codes of practice
  - 2.2. Fulfill the regulatory and legal obligations required in current practice
  - 2.3. Demonstrate accountability to professional regulatory bodies
  - 2.4. Recognize and respond to others' unprofessional behaviors in practice
  - 2.5. Participate in peer-review

3. Demonstrate commitment to physician health and sustainable practices
  - 3.1. Balance personal and professional priorities to ensure personal health and sustainable practices
  - 3.2. Strive to heighten personal and professional awareness and insight
  - 3.3. Recognize other

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