الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

SAUDI RESPIRATORY MEDICINE FELLOWSHIP CURRICULUM


بسم الله الرحمن الرحيم

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ACKNOWLEDGEMENTS

The Respiratory Medicine Fellowship team acknowledges the valuable contributions and feedback from the members of the scientific committee in the development of this program. We extend special appreciation and gratitude to all the members who have been pivotal in the completion of this booklet, especially the Curriculum Group, the Curriculum Specialists, and Scientific Council. We would also like to acknowledge that the CanMEDS framework is a copyright of the Royal College of Physicians and Surgeons of Canada, and many of the description competencies have been acquired from their resources.

INTRODUCTION

Respiratory diseases are common worldwide and are a leading cause of morbidity and mortality in both the Kingdom of Saudi Arabia (KSA) and globally. The Respiratory Medicine specialty has been growing for the last few decades as more knowledge and understanding of disease pathophysiology and evolution of therapeutic modalities for the treatment of severe and life-threatening pulmonary diseases. In the last three decades, major advances have taken place in terms of disease management, introduction of new diagnostic and therapeutic modalities, sleep medicine, lung transplant, and the progression of interventional bronchoscopy. These scientific advances and updated clinical practice mandate that pulmonologist be of certain competencies and high caliber in managing pulmonary diseases. Therefore, the demand for skilled pulmonologists in the KSA is increasing, and thus, establishing a postgraduate training in the field of respiratory medicine is necessary.

A well-structured program under the supervision and accreditation of the Saudi Council for Health Specialties (SCFHS) would ensure a uniform standard of solid and advanced training all over the kingdom and encourage more candidates to enroll in the field of respiratory medicine.

Respiratory Medicine began to evolve as a sub-specialty in the Saudi Commission for Health Specialties (SCFHS) since 2005. The scientific board was assigned to build the structure, curriculum, and regulations of the new fellowship programs. In 2008, the first batch of pulmonary fellows graduated from the Saudi Fellowship in Adult Respiratory Medicine. The numbers of graduates have doubled in the last few years and more centers have joined the program.

The accredited centers for the fellowship program have expanded to include the following centers as of August 2020:

King Fahad Medical City	Riyadh
King Faisal Specialist Hospital & Research Center-Riyadh	Riyadh
King Abdulaziz Medical City-Riyadh	Riyadh
Prince Sultan Medical City	Riyadh
King Khalid University Hospital	Riyadh
King Fahad Specialist Hospital	Dammam
King Abdulaziz University Hospital	Jeddah
King Abdulaziz Medical City-Jeddah	Jeddah
King Faisal Specialist Hospital & Research Center-Jeddah	Jeddah
King Fahad Armed Forces Hospital	Jeddah
King Fahad General Hospital	Jeddah

The Saudi board program of “Adult Respiratory Medicine” consists of two years of full-time supervised fellowship training in Respiratory Medicine. The training institution must be accredited by SCFHS towards a Saudi Board certification in Adult Respiratory Medicine. Training shall be comprehensive and include inpatients, outpatients care, critical care, thoracic imaging, thoracic surgery, pulmonary functions, and sleep medicine. The fellows shall be actively involved in patient care with increasing responsibility as experience and competence are gained; they will adhere to the rules and regulations of the fellowship program. Upon successful completion of the program, the fellows will be awarded the “**Saudi Fellowship in Adult Respiratory Medicine**”.

Goals and Responsibilities of Curriculum Implementation

The ultimate goal of this curriculum is to guide trainees to become competent in adult respiratory medicine. This goal will require significant amount of effort and coordination from all stakeholders involved in postgraduate training. As *"adult-learners",* trainees have to demonstrate full engagement with *proactive* roles by careful understanding of learning objectives, self-directed learning, openness to reflective feedback and formative assessment, self-wellbeing, and seeking support when needed. The program director plays a vital role in the successful implementation of the curriculum. Training committee members also have significant impact on the program implementation. Trainees should be enabled to share the responsibility in curriculum implementation. The SCFHS will apply the best models of training governance to achieve the best quality of training. Academic affairs in training centers and the regional supervisory training committee will have major roles in training, supervision, and implementation. The scientific committee of the adult respiratory fellowship will be responsible to ensure that the content of this curriculum is constantly updated to match the best-known standards in the postgraduate education of their specialty.

What is New in this Edition?

This curriculum replaces the previous version of the Respiratory Medicine Fellowship Program curriculum with modifications to ensure that it meets the updated SCFHS rules and Canadian Medical Education Directions for Specialists (CanMeds) frameworks.

Additionally, the new version has been transformed into a competency-based curriculum, with explicit representation of learning domains (knowledge, skills, and behavior). Moreover, this edition better describes the supervisory frameworks, which support independent learning within a formal structure, and enriched formative assessment.

Policies and Procedures

This curriculum represents the means and materials outlining learning objectives with which trainees and trainers will interact for the purpose of achieving the identified educational outcomes. The SCFHS has a full set of "General Bylaws" and "Executive Policies" (published on the official SCFHS website) that regulate all processes related to the training. General bylaws of training, assessment, and accreditation as well as executive policies on admission, registration, continuous assessment and promotion, examination, trainees' representation and support, duty hours, and leaves are examples of regulations that need to be applied. Trainees, trainers, and supervisors need to implement this curriculum in compliance with the most updated bylaws and policies which can be accessed online via the official SCFHS website.

Abbreviations Used in This Document

Abbreviation	Description
SCFHS	Saudi Commission for Health Specialties
DOPS	Direct Observation of Procedural Skills
ITER	In-training evaluation report
PFL	Primary Focus in Learning
AHD	Academic half-day
Mini-CEX	Mini-Clinical Evaluation Exercise
CBD	Case-based discussion
SDL	Self-directed learning
CBL	Clinic-based learning
OBL	On call-based Learning
JC	Journal Club

PET	Positron emission tomography
PSG	Polysomnography
CPAP	Continuous positive airway pressure
BPAP	Bilevel positive airway pressure
EBUS	Endobronchial ultrasound
PFT	Pulmonary function test
tcCO2	Transcutaneous carbon dioxide
F1	Fellowship year 1
F2	Fellowship year 2

STRUCTURE OF THE TRAINING PROGRAM

Program Entry Requirements

Admission Requirements

To be accepted into the training program, the candidate must fulfill the following requirements as per the SCFHS Admission Requirements for Postgraduate Training Programs. For updated policies, please refer to scfhs.org.sa:

1) A medical degree (e.g. M.B.B.S) or equivalent from a recognized university
2) "Saudi Board of Internal medicine" certificate or equivalent from a recognized institute.
3) The provision of a letter from a sponsoring organization giving approval for the candidate to undertake full-time training for the entire duration of the program (two years)
4) Registration as a senior registrar in internal medicine at the Saudi Commission for Health Specialties.

General Training Requirements

1) The trainee shall abide by the training regulations and obligations as set by the Saudi Commission for Health Specialties.
2) The training is a full-time commitment. The trainee shall be enrolled in full-time continuous training for the entire duration of the program.
3) The training is to be conducted in institutions accredited for training by the Saudi Board of Adult Respiratory Medicine.
4) The training will be comprehensive in the specialties of Adult Respiratory Medicine.

Program Duration: 24 months

Program Rotations:

1- **For the first year of training:**
12 months of training time consisting of:
- General Respiratory Medicine: 8 months
- Critical Care Medicine: 1 month
- Sleep Medicine: 1 month
- Thoracic Radiology: 1 month
- Annual vacation: 4 weeks

2- **For the second year of training:**
12 months of training time consisting of:
- General Respiratory Medicine: 7 months.
- Critical Care Medicine: 1 month.
- Lung Transplant: 1 month.
- Electives*: 2 months.

Annual vacation: 4 weeks

*Electives: Interventional Pulmonary, Interventional Radiology, Sleep, ICU, Lung Transplant, Thoracic Surgery and Research (mandatory to submit research abstract)

1st Year	Rotations	Duration
	General Respiratory Medicine	8 months
	Critical Care Medicine	1 month
	Sleep Medicine	1 month
	Thoracic Radiology	1 month

	Annual vacation	4 weeks
2nd Year	Rotations	Duration
	General Respiratory Medicine	7 months
	Critical Care Medicine	1 month
	Electives	2 months
	Lung Transplantation	1 month
	Annual vacation	4 weeks

Core Rotations: GENERAL RESPIRATORY Medicine

General Objective:

The fellow will develop competencies in providing medical care for patients with a variety of respiratory diseases encountered during both inpatient and outpatient clinical respiratory services.

Total Duration

Fifteen months of General Respiratory Medicine rotations may be completed in more than one hospital and should include both general inpatient, consultation and general outpatient respiratory services.

Outline of Training

- Year One: 8 months
- Year Two: 7 months

Inpatient Respiratory Service Rotation

General Objective: Upon completion of rotation through the inpatient respiratory service, the fellow will acquire the principles and practice of evaluation and management of respiratory diseases. In addition, they will acquire experience and expertise in performing procedures necessary to practice respiratory medicine. The fellows will also acquire the leadership skills required to be an effective pulmonary consultant

The fellow will demonstrate the following in a variety of roles:

Medical Expert

- Demonstrate the ability to diagnose and treat complex respiratory diseases
- Develop proficiency in the management care of patients with chronic, advanced, or end-stage respiratory diseases
- Develop proficiency in interpreting pulmonary function tests and chest imaging including chest computed tomography (CT)
- Acquire clinical skills to safely and efficiently perform common respiratory procedures, such as bronchoscopy and thoracentesis under pleural ultrasound guidance
- Demonstrate an understanding of the indications, contraindications, and a working knowledge of the physiologic principles that apply to non-invasive mechanical ventilation for the treatment of respiratory failure

Communicator

- Communicate effectively, accurately, and compassionately with patients and their families
- Exhibit effective written communication skills in the form of chart notes and maintain comprehensive, timely, and legible medical records

Collaborator

- Work in an inter-professional environment to enhance patient safety and improve the quality of patient care
- Coordinate the care of patients with other health professionals in various departments

Leader

- Demonstrate the management skills required to functions as an effective team leader
- Demonstrate the ability to deal with the most challenging patients and families.
- Demonstrate the ability to facilitate resolution of conflicts with team members
- Acquire skills to improve the quality and safety of health care at both the individual and systems levels

Health Advocate

- Demonstrate an awareness of community resources available for patient care, including home health care services, smoking cessation programs, and patient support services as well as how to refer patients to these programs
- Serve as an advocate for their patient's health, which includes promotion of smoking cessation, exercise, and other appropriate preventative health strategies
- Acquire skills in health advocacy by promoting a safe community environment by minimizing the risk of tuberculosis disease transmission

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine to formulate care plans
- Participate in the education of patients, families, students, residents, and other health professionals

Professional

- Exhibit appropriate professional behavior and relationships in all aspects of practice while demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality in their interactions with colleagues and patients
- Recognize personal limitations, seek and accept assistance or supervision

Respiratory Consultation Service Rotation

General Objective: Upon completion of rotations through the Respiratory Consultation Service, the fellow will acquire the principles and practice of evaluation and management of patients with pulmonary diseases. In addition, they will acquire experience and expertise in the performance of procedures necessary to practice respiratory medicine. They will acquire the skills and competency that shows they are ready for unsupervised practice.

The fellow will demonstrate the following as a medical expert, communicator, collaborator, leader, health advocate, scholar, and professional:

Medical Expert

- Demonstrate the ability to develop a comprehensive management plan for patients with respiratory diseases
- Demonstrate the ability to provide respiratory medicine consultation to other medical and nonmedical specialties in both inpatient and outpatient settings
- Demonstrate the ability to provide perioperative pulmonary assessment and care.
- Develop proficiency in interpreting pulmonary function tests and chest imaging including chest CT.
- Acquire clinical skills to safely and efficiently perform common pulmonary procedures such as bronchoscopy and thoracentesis under pleural ultrasound guidance.

- Demonstrate an understanding of the indications, contraindications, and a working knowledge of the physiologic principles that apply to non-invasive mechanical ventilation for the treatment of respiratory failure

Communicator

- Communicate effectively, accurately, and compassionately with patients and their families
- Demonstrate competency in effective communication with colleagues, medical consultants, consultants from other specialties, and other members of the health care team
- Exhibit effective written communication skills in the form of chart notes and maintain comprehensive, timely, and legible medical records

Collaborator

- Work with an inter-professional team to enhance patient safety and improve the quality of patient care
- Coordinate the care of patients with other health professionals in various departments

Leader

- Demonstrate the management skills required to functions as an effective team leader
- Demonstrate the ability to deal with the most challenging patients and families
- Demonstrate the ability to facilitate resolution of conflicts with team members
- Acquire skills to improve the quality and safety of health care at both the individual and systems levels

Health Advocate

- Demonstrate an awareness of community resources available for patient care including home health care services, smoke cessation programs, and patient support services and how to refer patients to these programs
- Serve as an advocate for their patient's health, which includes promotion of smoking cessation, exercise, and other appropriate preventative health strategies
- Acquire skills in health advocacy by promoting a safe community environment by minimizing the risk of tuberculosis disease transmission
- Demonstrate an awareness of pulmonary rehabilitation in the management of patients with advanced chronic pulmonary diseases

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine to formulate care plans
- Participate in the education of patients, families, students, residents, and other health professionals

Professional

- Exhibit appropriate professional behaviors and relationships in all aspects of practice while demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality in their interactions with colleagues and patients
- Recognize personal limitations, seek and accept assistance or supervision
- Demonstrate commitment to on-going professional development and lifelong learning

Respiratory Outpatient Service Rotation

General Objective: Upon completion of rotations through the Respiratory Outpatient Service, the fellow will acquire the principles and practice of evaluation and management of patients with general respiratory complaints. This will be in addition to gaining knowledge and experience in managing specific respiratory disorders as they rotate through specialized pulmonary clinics. Fellows are expected to cover two or more clinics weekly on a regular basis. Continuity clinics are encouraged whenever possible.

The fellow will demonstrate the following as a medical expert, communicator, collaborator, leader, health advocate, scholar, and professional:

Medical Expert

- Demonstrate the ability to evaluate and develop a comprehensive management plan for patients referred with respiratory diseases
- Demonstrate the ability to provide respiratory medicine consultation to other medical and nonmedical specialties
- Demonstrate the ability to provide pre-operative pulmonary assessment and risk stratification
- Develop proficiency in interpreting pulmonary function tests and chest imaging, including chest CT
- Demonstrate the ability to initiate and follow the workups required for general and more specialized respiratory cases
- Demonstrate the ability to set a follow-up plan for general and more specialized respiratory cases. As well as the criteria for referring these cases to other services or discharging them from the respiratory service
- Demonstrate an understanding of the indications, contraindications, and a working knowledge on referring patients with chronic respiratory diseases to pulmonary rehabilitation, lung transplant, vaccinations, physiotherapy, and so on

Communicator

- Communicate effectively, accurately, and compassionately with patients and their families
- Demonstrate competency in effective communication with colleagues, medical consultants, consultants from other specialties, and other members of the health care team
- Exhibit effective written communication skills in the form of chart notes and maintain comprehensive, timely, and legible medical records

Collaborator

- Work with an inter-professional team to enhance patient safety and improve patient care quality
- Coordinate the care of patients with other health professionals in various departments
- Coordinate the care of patients with the clinic management team

Leader

- Demonstrate the management skills required to functions as an effective team leader
- Demonstrate the ability to deal with the most challenging patients and families
- Demonstrate the ability to manage the clinic session effectively and efficiently
- Acquire skills to improve the quality and safety of health care at both the individual and systems level

Health Advocate

- Demonstrate an awareness of community resources available for patient care including home health care services, smoke cessation programs, vaccinations and patient support services and how to refer patients to these programs
- Serve as an advocate for their patient's health, which includes promotion of smoking cessation, exercise, vaccinations, and other appropriate preventative health strategies

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine to formulate care plans
- Participate in the education of patients, families, students, residents, and other health professionals

Professional

- Exhibit appropriate professional behaviors and relationships in all aspects of practice while demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality in their interactions with colleagues and patients
- Recognize personal limitations, seek and accept assistance or supervision
- Demonstrate commitment to on-going professional development and lifelong learning

Core Rotation: CRITICAL MEDICINE ROTATION

General Objective: Upon completion of rotations through the Critical Care Service, the fellow will acquire the principles and practice of evaluation and management of patients with critical conditions. They will equally acquire experience and expertise in performing procedures relevant to the critical care setting and managing the different modalities of mechanical ventilation. The fellows will also acquire the skills and competency that show they are ready to assess and manage unstable critically ill patients in an unsupervised setting.

The fellow will demonstrate the following as a medical expert, communicator, collaborator, leader, health advocate, scholar, and professional:

Medical Expert

- Demonstrate the ability to develop a comprehensive management plan for patients with acute complex medical and surgical disorders in the ICU setting
- Demonstrate the ability to resuscitate, stabilize and care for unstable or critically ill patients.
- Provide consultation to other medical specialties
- Acquire clinical skills to safely and efficiently perform common respiratory procedures, such as bronchoscopy, thoracentesis and central venous catheter under ultrasound guidance, and percutaneous chest tube insertion
- Acquire clinical skills to safely and efficiently perform endotracheal intubation, and the set up and initiation of mechanical ventilation
- Demonstrate an understanding of the indications, contraindications, and a working knowledge of the physiologic principles that apply to invasive and non-invasive mechanical ventilation for the treatment of respiratory failure
- Demonstrate the ability to assess the patient for suitability of withdrawal of mechanical ventilation (weaning) and withdraw mechanical ventilation in a safe manner

Communicator

- Communicate effectively, accurately, and compassionately with patients and their families
- Acquire clinical skills to facilitate family meetings including advanced directive and end-of-life decisions
- Demonstrate competency in effective communication with colleagues, ICU consultants, consultants from other specialties, and other members of the health care team

Collaborator

- Work with an inter-professional team to enhance patient safety and improve patient care quality
- Coordinate the care of patients with other health professionals in various departments

Leader

- Demonstrate the management skills required to lead a multidisciplinary critical care medicine team
- Acquire skills to improve the quality and safety of health care at both the individual and systems levels

Health Advocate

- Proactive in advocating for patients and their families
- Demonstrate proficiency in how and when to appropriately institute, maintain, or discontinue life-sustaining treatments

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine to formulate care plans
- Participate in the education of patients, families, students, residents, and other health professionals

Professional

- Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality in their interactions with colleagues and patients
- Recognize and appropriately respond to ethical issues such as consent, advanced directives, end-of-life care, and withdrawing and withholding life support
- Recognize personal limitations, seek and accept assistance or supervision
- Demonstrate commitment to on-going professional development and lifelong learning

Core Rotation: THORACIC RADIOLOGY ROTATION

General Objective: Upon completion of rotations through Chest Radiology, the fellow will acquire the skill in interpretation of plain chest radiographs and CT scans of the chest. The fellow may also gain experience in interventional radiology suite, such as performing pleural biopsies and thoracentesis under imaging guidance.

The fellow will demonstrate the following as a medical expert, communicator, collaborator, leader, health advocate, scholar, and professional:

Medical Expert

- Demonstrate a working knowledge of the indications, limitations, and contraindications of the various chest imaging modalities
- Demonstrate the ability to identify normal structures, describe abnormal findings, and provide a differential diagnosis for plain chest radiographs and CT scans of the chest
- Demonstrate knowledge of the role of ventilation/perfusion (V/Q) scanning, positron emission tomography (PET) scanning, and magnetic resonance imaging (MRI) in the evaluation of pulmonary disease
- Demonstrate the ability to identify and describe the imaging features of acute pulmonary embolism on CT pulmonary angiography
- Demonstrate the ability to Identify and describe the imaging evolution and differential features of interstitial pneumonitis on chest radiography and CT
- Demonstrate the ability to describe the imaging evaluation and management of solitary pulmonary nodules
- Demonstrate the ability to staging lung cancer with CT (in conjunction with PET) via the revised TNM system
- Describe features of large and small airways disease on CT, including inspiratory and expiratory imaging
- The fellow will describe and differentiate the morphologic subtypes of emphysema versus cystic lung disease

Communicator

- Effectively communicate the results of plain chest radiographs and CT scans of the thorax to the referring physician
- Generate a concise diagnostic radiology report

Collaborator

- Participate effectively and appropriately in an inter-professional healthcare team with colleagues in radiology
- Demonstrate an understanding of the important role of clinical information provided by the clinician to the Radiologist

Leader

- Demonstrate knowledge of how limitations in medical imaging resources may affect selection and timing of diagnostic testing for a given patient

Health Advocate

- Explain the utility, risks, and benefits of radiological procedures to patients as part of informed consent
- Demonstrate knowledge of the risks of radiation exposure to patients from diagnostic imaging procedures
- Demonstrate knowledge of the role of radiographic screening for lung cancer
- Advocate for expedited testing and/or reporting of results in patients with urgent problems or with alarming findings on imaging studies

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine pertaining to chest radiology
- Participate in the effective teaching of medical students and other trainees and/or observers
- Demonstrate effective teaching presentation at the combined multidisciplinary pulmonary-radiology round

Professional

- Strive to incorporate the highest levels of attitudes, ethics, and values in their interactions with radiology staff, colleagues, and patients.

Core Rotation: SLEEP MEDICINE ROTATION

General Objective: Upon completion of rotations through Sleep Medicine, the fellow will acquire the principles and practice of the evaluation and management of patients with sleep-disordered breathing. In addition, they will understand the appropriate use of diagnostic tests in the diagnosis and management of sleep-disordered breathing.

The fellow will demonstrate the following as a medical expert, communicator, collaborator, leader, health advocate, scholar, and professional:

Medical Expert

- Obtain a history relevant to sleep disorders. This includes:
  - symptoms that indicate sleep pathology
  - clinical factors that predict the presence or absence of sleep disorders
  - history of sleep habits and rituals
  - sleep hygiene
  - family history where relevant
  - impact of sleep disorder on the patient's quality of life and health

- Demonstrate knowledge of the epidemiology, prevention, pathogenesis, clinical manifestations, laboratory testing, treatment, prognosis and complications of:
  - Obstructive sleep apnea
  - Central sleep apnea
  - Cheyne-Stokes respiration
  - Sleep hypoventilation
  - Insomnia
  - Narcolepsy
  - Restless legs syndrome and periodic limb movement disorder

- Demonstrate knowledge of an approach to diagnosis and management of the following common sleep related complaints:
  - Hypersomnolence
  - Insomnia
  - Abnormal nocturnal behaviors
  - Snoring

- Be able to manage:
  - Obstructive sleep apnea
  - Central sleep apnea
  - Cheyne stokes breathing
  - Complex sleep apnea
  - Sleep apnea/COPD overlap
  - Sleep hypoventilation/chronic respiratory failure
  - Insomnia, restless legs syndrome and periodic limb movement disorders

- Be able to interpret polysomnography/Multiple Sleep Latency Test (MSLT)/Maintenance of Wakefulness Test (MWT) including:
  - recognition of normal or disrupted sleep architecture
  - recognition of sleep stages and arousals from sleep
  - scoring of respiratory events, including apneas, hypopneas, increased upper airway resistance.
  - Hypoventilation and Cheyne Stokes respiration
  - Evidence for narcolepsy/abnormal MSLT

- Understand the limitations of diagnostic tests in Sleep Medicine including:
  - PSG +/- tcCO2
  - MSLT/MWT
  - Ambulatory, level 3 testing for sleep disordered breathing
  - Clinical prediction rules
  - Empiric trials of therapy

Communicator

- Communicate effectively, accurately and compassionately with patients and their families
- Demonstrate competency in effective communication with colleagues, medical consultants, consultants from other specialties, and other members of the health care team
- Exhibit effective written communication skills in the form of chart notes and maintain comprehensive, timely, and legible medical records

Collaborator

- Work with an inter-professional team to enhance patient safety and improve patient care quality
- Coordinate the care of patients with other health professionals in various departments

Leader

- Demonstrate the management skills required to functions as an effective team leader
- Demonstrate appropriate health care resource utilization
- Acquire skills in managing long sleep Centre's waiting list
- Demonstrate skills in improving quality and safety of health care at both individual and systems levels

Health Advocate

- Demonstrate awareness of resources available for patient care including securing supplying for CPAP, BPAP, and supplemental oxygen therapy
- Serve as an advocate for their patient's health, which includes promotion of smoking cessation, good sleep hygiene, exercise, and other appropriate preventative health strategies
- Serve as an advocate for community health and safety by minimizing sleep-disorder related motor vehicle accident

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine relevant to sleep medicine to formulate care plans
- Participate in the education of patients, families, students, residents, and other health professionals

Professional

- Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality in their interactions with colleagues and patients
- Recognize personal limitations, seek and accept assistance or supervision
- Demonstrate commitment to on-going professional development and lifelong learning.

Core Rotation: LUNG TRANSPLANTATION ROTATION

General Objective: Upon completion of rotations through the Lung Transplantation Rotation, the fellow will acquire principles and practice of evaluation and management of patient with transplant recipients and patients with advanced pulmonary diseases.

The fellow will demonstrate the following as a medical expert, communicator, collaborator, leader, health advocate, scholar, and professional:

Medical Expert

- Demonstrate the ability to assess the suitability of the patient with advanced pulmonary diseases for lung transplantation
- Demonstrate the ability to develop a comprehensive management plan for patients listed for transplantation, including clinical follow-up, status assignment, palliative care, and rehabilitation
- Demonstrate the ability to assess and manage lung transplant recipients in the perioperative period including Immuno-suppression, infectious disease prophylaxis, and acute allograft rejection
- Demonstrate knowledge in monitoring of immunosuppressive medications used in lung transplant recipients
- Demonstrate the ability to assess and manage post-hospitalization and long-term complications of lung transplantation, including acute and chronic rejections, opportunistic infections, post-transplant lympho-proliferative disorder, and osteoporosis
- Develop proficiency in interpreting pulmonary function tests and chest imaging including CT chest in lung transplant recipients
- Acquire clinical skills to safely and efficiently perform bronchoscopy in lung transplant recipients

Communicator

- Communicate effectively, accurately, and compassionately with patients and their families
- Demonstrate competency in effective communication with colleagues, medical consultants, consultants from other specialties, and other members of the health care team
- Exhibit effective written communication skills in the form of chart notes and maintain comprehensive, timely, and legible medical records

Collaborator

- Work with an inter-professional team to enhance patient safety and improve patient care quality
- Coordinate the care of patients with other health professionals in various departments
- Demonstrate an understanding of the roles and responsibilities of the multidisciplinary team in the management of patients in the pre- and post-transplant periods

Leader

- Demonstrate the management skills required to functions as an effective team leader
- Demonstrate knowledge of the factors limiting the supply of donor organs and the role of transplant programs in managing this limited resource
- Acquire skills to improve the quality and safety of health care at both individual and systems levels

Health Advocate

- Demonstrate an awareness of community resources available for patient care including home health care services and patient support services and how to refer patients to these programs
- Demonstrate an awareness of strategies for promotion of organ donation, including education of health professionals and the public
- Demonstrate an awareness of pulmonary rehabilitation and palliative care in the management of patients with advanced chronic pulmonary diseases

Scholar

- Demonstrate critical appraisal of the literature and uses principles of evidence-based medicine relevant to lung transplantation to formulate care plans
- Participate in the education of patients, families, students, residents, and other health professionals

Professional

- The fellow will exhibit appropriate professional behavior and relationships in all aspects of practice while demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality in their interactions with colleagues and patients
- Recognize ethical issues related to organ transplantation
- Demonstrate commitment to on-going professional development and lifelong learning

TEACHING AND LEARNING ACTIVITIES

General Principles

1. Teaching should contain both: a) Structured-programmatic component, and b) Practice-based component.
2. Efforts should be directed to enhance fellows toward more responsibility for self-directed learning.
3. Every week at least 2-4 hours of formal training time (commonly referred to as *academic half day*) should be reserved. A formal teaching time is an activity that is planned in advanced with assigned tutor, time slots, and venue. Formal teaching time excludes bedside teaching, clinic postings etc.
4. Formal training time (commonly referred to as *academic half-day [AHD]*) would include the following three formal teaching activities:
   i. Universal topics: 20%
   ii. Core specialty topics: 60-70%
   iii. Trainee selected topics: 10-20%
5. Formal training time in the form of AHD should be supplemented by other practice-based learning (PBL), such as:
   a) Morning report or case presentations
   b) Morbidity and mortality reviews
   c) Journal clubs
   d) Grand rounds
   e) Continuous professional activities (CPD) relevant to specialty

6. Every two weeks at least 1 hour should be assigned by fellows to meet with their mentors to review performance reports
7. Through the fellowship training committee, program directors and chief fellows in coordination with academic and training affairs and regional supervisory committees, should work together to ensure planning and implementation of academic activities as indicated in the curriculum. This should aim for efficient use of available resources and to optimize exchange of expertise.

Universal Topics (E-Learning Modules)

1. Universal topics are educational activities that are developed and aimed for all specialties.
2. Universal topics are being centrally developed by the SCFHS and is available as e-learning, and personalized access is granted for each trainee to access the online module.
3. Each universal topic will have a self-assessment at the end of the module.
4. As indicated in the “executive policies of continuous assessment and annual promotion”, universal topics is a mandatory component of the criteria for the annual promotion of fellows from their current level of training to the subsequent level.
5. These are high-value, interdisciplinary topics of utmost importance to the trainee. Fellows are highly encouraged to go over the following modules:
   Fellowship year 1: Module 1 and 7
   Fellowship year 2: Module 4 and 5

These modules are available online: https://scfhs.org.sa/en/MESPS/Pages/UniversalTopics.aspx

Core Specialty Topics (Appendix A)

1. Core specialty topics are determined and approved by the specialty’s scientific council aligned with the specialty-defined competencies and teaching methods.
2. Core specialty topics will ensure that important clinical problems of the specialty are well taught.
3. Unlike Universal Topics, the format of core specialty topics is encouraged to be in interactive, case-based discussion format with pre-learning materials.
4. Whenever applicable, core specialty topics should include workshops, team-based learning (TBL) and simulation to develop skills in core procedures.
5. Learning objectives of each core topic need to be clearly defined.

6. Regional supervisory committees in coordination with academic and training affairs, program directors, and chief fellow should work together to ensure planning and implementation of academic activities as indicated in the curriculum.
   a) There should be an active involvement of the fellow in the development and delivery of the topics under faculty supervision; the involvement might be in the form of delivery, content development, research, and so on.
7. Core specialty can be stratified into three categories based on the dominant learning domain: knowledge, skill, and attitude:
   - **Knowledge**: (Refer to **Appendix A:)** This section will address topics of knowledge that are related to "health", "disease", and "preventive" aspects of the adult respiratory medicine specialty, which are not generally covered under practice-based teaching.
   - **Skills**: Procedures list should be divided into three categories:
     Category I: Assumed competent
     These are procedures assumed to be previously learned.

     Category II: Foundational Core Specialty Procedures These are the specialty foundational procedures that are required to be learned and practiced under supervision during the training. Expected completion for Category II procedures should be during junior level of training.

     Category III: Mastery level procedures
     These are core specialty procedures that fellows are expected to be competent performing unsupervised at the end of training.

     For Category II and III procedures, each trainee needs to maintain a logbook documenting the procedures observed, performed under supervision, and performed independently. Trainees need to declare that he/she is competent in Category I procedures. If for any reason, a trainee is not competent in any given Category I procedures he/she should be provided with extended supervised training.

   - **Attitude:** Behavioral/communication skills are categorized into two:
     a) Category I: Assumed or Universal, which includes previously learned behavioral and communication skills and skills that are universal in nature (e.g. breaking bad news; consent taking for blood transfusion).
     b) Category II: Core specialty, which includes specialty specific behavioral and communication skills (e.g. informed consent for fibro-optic bronchoscopy, endobronchial ultrasound (EBUS), ultrasound thoracentesis, handling end-of-life issues for patients with advanced lung diseases).

Academic Teaching Activities:

Required academic teaching activities for the fellows include:

1– Journal club
2– Multidisciplinary team rounds (e.g. thoracic radiology, thoracic surgery, and thoracic oncology).
3– Morbidity and mortality conferences-
4– Self-directed learning (SDL)

1. Journal Clubs:
A journal club meeting is conducted at least once every 2-4 weeks. The trainee with program director/assigned mentor will choose new articles from reputed journal and least one weeks before the scheduled meeting. The objectives of journal club are:

- Promoting continuing professional development
- Keeping up-to-date with the literature
- Disseminating information on and build up debate on good practice
- Ensuring that professional practice is evidence-based
- Learning and practicing critical appraisal skills

- Providing an enjoyable educational and social occasion

2. **Multidisciplinary Team Rounds**
   Joint specialties meeting with radiologist, pathologist, oncology or surgeons, and tumor board meetings are conducted once or twice weekly according to facility capability.

   The objectives of the joint specialty meeting are to:

   - Provide the knowledge, technical skills and experience necessary to interpret and correlate clinical finding, laboratory date such as radiological imaging with the pathological changes
   - Promote effective communication and sharing of expertise with peers and colleagues
   - Promote the development of investigative skills to better understand pathologic processes as they apply to both individual patients and the general patient population
   - Promote the acquisition of knowledge, provide experience in laboratory direction and management, and encourage residents to assume a leadership role in the education of other physicians and allied health professionals

3. **Morbidity and mortality conferences:**
   Mortality and morbidity conferences are conducted at least once every 6 months. The program director and the department chairman will assign the task to a group of trainees who will prepare and present the cases for all the members of the department. The proceedings are generally kept confidential by law.

   The objectives of the mortality and morbidity conference are:

   - To focus on the goal of improving patient care and identify areas for improvement by clinicians involved
   - To prevent errors that lead to complications
   - To modify behavior and judgement based on previous experiences
   - To identify systems issues that may affect the patient care

4. **Self-Directed Learning (SDL):**
   - Achieving personal learning goals beyond the essential core curriculum
   - Maintenance of personal portfolio (self-assessment, reflective learning, personal development plan)
   - Audit and research projects
   - Reading journals
   - Attendance of other scientific activities (symposia, conferences, board reviews, etc)

Workshops

Fellows are expected to attend the following mandatory workshops once during their training period:

Basic bronchoscopy (Simulation-based)

Pleural ultrasound (Simulation-based)

Research Project

Fellows must complete a project at the end of training, which can be any of the following:

- Qualitative or quantitative research project
- Pulmonary medicine-related evidence-based policy & procedure
- Participate in development of pulmonary diseases local guidelines
- Quality improvement project
- Published case report: Although case report should not be counted as research project. However, with the approval of scientific committee; a case report that is published in peer-reviewed journal may be acceptable as an alternative to research

Scholar Activity

- Fellows expected to document presentation of core topics/journal club during the training program
- Fellows are expected to participate in the teaching of medical students and residents
- Fellows are required to attend one national or international scientific meeting during their training period and provide documented evidence of their attendance

ASSESSMENT

- The purpose of the assessment system is to:
  - Enhance learning by providing formative assessment, enabling trainees to receive immediate feedback, measure their own performance and identify areas for development
  - Drive learning and enhance the training process by clarifying what is required of trainees and motivating them to ensure they receive a suitable training and experience
  - Provide robust, summative evidence that trainees are meeting the curriculum standards during the training program
  - Ensure trainees are acquiring competencies within the domains of good medical practice
  - Assess trainees' actual performance in the workplace
  - Ensure that trainees possess the essential underlying knowledge, skills, and attitude required for their specialty
  - Identify trainees who should be advised to consider a career change

– Formative Continuous Assessment

Trainees, as adult learners, should strive for feedback throughout their journey of competency from "novice" to "mastery" levels. *Formative assessment* (also referred to as continuous assessment) is the component of assessment that is distributed throughout the academic year aiming primarily to provide trainees with effective feedback. Input from the overall formative assessment tools will be utilized at the end of the year to make the decision of promoting each individual trainee from the current-to-subsequent training level. Formative assessment will be defined based on the scientific (council/committee) recommendations (usually updated and announced for each individual program at the start of the academic year). According to the executive policy on continuous assessment (available online: www.scfhs.org), formative assessment will have the following features:

To fulfill the CanMEDS competencies based on the end-of-rotation evaluation, the fellow's performance will be evaluated jointly by 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 (i.e., monthly evaluation, rotational Mini-CEX*, CBDs,). Appendix C, D
4. The trainee's performance of diagnostic and therapeutic procedural skills. Timely and specific feedback from the trainer to the trainee is mandatory following each procedure by:
   Direct observation of procedural skills (DOPS): This assessment is conducted at the beginning of fellowship training, end of fellowship year 1 (F1) and at the end of fellowship year 2 (F2). The trainee will perform procedures under the supervision of the attending consultant and receive immediate feedback. The failure to submit this form to the local training committee within two months of training shall be discussed with the local training program director.

5. The CanMEDS-based competencies: end-of-rotation evaluation form must be completed (preferably in electronic format), with the signatures by 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 regional Training Supervisory Committee within 4 weeks of the end of the rotation. (Appendix E)
6. Academic and clinical assignments should be documented on an electronic tracking system (e-Logbook, when applicable) on an annual basis. Participation in academic activities will be evaluated immediately after each activity. (Appendix F, approved by the scientific committee)
7. Pulmonary fellows will be evaluated on the CanMEDS competencies with each educational experience using multiple assessment tools. Several assessment forms will develop for specific rotations.

List of Formative Assessment Tools

Domain	Assessment Tools	
	Fellowship Year 1	Fellowship Year 2
Knowledge	1. Progress Test: written (local) 2. Structured academic activities	1. Structured Oral Exam (SOE) 2. Structured academic activities
Skills	**Log-Book:** The fellow is expected perform not less than the number of cases of the following procedures 1. Bronchoscopy: 50 cases (at least bronchoalveolar lavage: 30 cases, forceps biopsies: 25 cases) 2. Ultrasound-guided thoracentesis: 10 Feedback by the program director will be given to the fellows every 6 months and instructions will be given to fulfill deficient procedures. Complete logbook including all the academic activities signed by program director need to be submitted to scientific committee at the end of their training. **DOPS**: The procedures form should be filled out at the beginning of the two months of training, end of F1 and end of F2 **Mini-CEX:** Performed at least one assessment per clinical rotation, preferably near the end of the rotation. **CBDs:** Performed at a frequency of at least one assessment per clinical rotation, preferably near the end of the rotation.	
Attitude	In-training evaluation report (ITER)	In-training evaluation report (ITER)

Progress Test:

This progress test will be limited to F1 fellows. Part I specialty written examination consists of one paper with minimum 100-120 single-best-answer (SBA) multiple choice questions (MCQs). The eligibility and passing score are established in accordance with the Commission's training and examination rules and regulations. Examination details and a blueprint are published on the Commission website, www.scfhs.org.sa (Appendix G)

Promotion Decision

Input from the overall formative assessment tools will be utilized at the end of the year to make the decision of promoting each individual trainee from the current-to-subsequent training level.

Summative Assessment

Final In-training Evaluation Report (FITER)/Comprehensive Competency Report (CCR)

1) This is a summative evaluation prepared at the end of the fellowship program, which grants the Fellow with the full range of competencies (knowledge, skills and attitudes) required for practicing adult respiratory medicine, and a readiness to sit for the Saudi certification examinations.
2) It provides information that will be considered by the Saudi Examination Board during the deliberation of a candidate whose performance at the Saudi certification examination falls into the borderline category.
3) The FITER is requested by the Saudi Board at the end of fellowship training.
4) The FITER is completed by the fellowship training Program Director.
5) The FITER is not a composite of the regular in-training evaluations; rather it is a testimony of the evaluation of competencies at the end of a fellowship education program.

6) It will be completed as late as possible in the Fellow's training but no later than two months before the Oral Structure Clinical Examination (OSCE) Exam.
7) The FITER of individual candidates is available only to the Chair of the Examination Committee, who must maintain confidentiality regarding the name of the candidate, the training center and the program director at all times.

Final Adult Respiratory Medicine Saudi Fellowship Examination

The final Saudi Fellowship examination consists of two parts:

1. Written Examination

This examination assesses the trainee's theoretical knowledge base (including recent advances) and problem-solving capabilities in the Pulmonary Medicine specialty; it is delivered in MCQ format and is held at least once per year. The examination consists of one paper with minimum 100-120 single-best-answer (SBA) MCQs. eligibility and passing score are established in accordance with the Commission's training, and examination rules and regulations. Examination details and a blueprint are published on the Commission's website, www.scfhs.org.sa (Appendix G)

2. Oral Structure Clinical Examination and Oral Structure Examination (OSCE and OSE):

This examination assesses a broad range of high-level clinical skills, including data gathering, patient management, communication, and counseling. The examination is held at least once per year, as an objective structured clinical examination (OSCE) in the form of patient management problems (PMPs). It consists of 8-12 graded stations each with encounters of 10-15 minutes. 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 published on the Commission website, www.scfhs.org.sa.

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 "Saudi Fellowship of Pulmonary Medicine" certificate.

APPENDICES

Appendix A: CORE SPECIALTY TOPICS:

The candidate should know the following subjects in great depth including all mentioned in ***primary focus in learning*** and ***specific underlying key conditions and problems***.

Anatomy
Anatomy of the lung, rib cage and diaphragm
Anatomy of the upper airway and brainstem
Pulmonary and bronchial Blood Vessels
Cell types, function and differentiation
Embryology of the respiratory system
Genetics relevant to the respiratory system

Physiology
Mechanics of breathing
Physiology of gas exchange
Oxygen and carbon dioxide transport
Ventilation and perfusion relationships
Control of breathing
Physiological changes in different lung diseases
Pathogenesis of hypoxia and hypercapnia
Physiology of sleep
Gases exchanges and ventilator control during sleep
Pulmonary function test (PFT)
Cardiopulmonary physiology during exercise
Acid-Base disturbance
Physiology of noninvasive ventilation
Pulmonary hemodynamics

Airway Diseases	
Primary Focus in Learning (PFL)	
Epidemiology, Pathophysiology, Classification, Etiology, Manifestations, Diagnostic approach, Assessment of severity, Complications, Acute and Chronic Management, Prevention, and Prognosis.	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Bronchial Asthma Aspirin-sensitive asthma Cough-variant asthma Allergic bronchopulmonary aspergillosis	Pathophysiology and diagnosis, Severity and stepped care, Special types and phenotypes of asthma, asthma mimics, and exacerbation.

Vocal cord dysfunction syndrome, Upper airway obstruction, Exercise-induced bronchospasm	
COPD: Chronic bronchitis emphysema alpha-1-antitrypsin deficiency	Severity and guidelines, strategies of assessing and treating, exacerbations, long term management, non-invasive ventilation, pulmonary rehabilitation smoking cessation, surgical options (e.g., bullectomy, LVRS, transplantation),
Bronchiectasis	*Follow PFL*
Bronchiolitis	*Follow PFL*
Tracheomalacia	*Follow PFL*

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Diffuse Parenchymal Lung Disease	
Primary Focus in Learning (PFL)	
Epidemiology, Pathophysiology, Classification, Etiology, Manifestations, Diagnostic approach, Assessment of severity, Complications, Acute and Chronic Management, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions***

- **Idiopathic interstitial pneumonias** • Acute interstitial pneumonia • Cryptogenic organizing pneumonia • Desquamative interstitial pneumonia • Idiopathic pulmonary fibrosis • Lymphocytic interstitial pneumonia (LIP) • Nonspecific interstitial pneumonia • Respiratory bronchiolitis–associated ILD • Acute and chronic eosinophilic pneumonias • Idiopathic pleuro pulmonary fibroelastosis and other conditions	Diagnostic approach and investigations, etiology, management
- **Interstitial lung disease (ILD) associated with systemic inflammatory disease** - ***Connective tissue disease*** (CTD)–**associated ILD:** Rheumatoid arthritis Systemic sclerosis Polymyositis and dermatomyositis Sjögren's syndrome, psoriasis, systemic lupus erythematosus, and other CTDs - **Inflammatory bowel disease–associated ILD** - ***IgG4-related disease and other diseases***	*Follow PFL*
- **Granulomatous interstitial lung diseases:** Sarcoidosis Pulmonary Extrapulmonary Hypersensitivity pneumonitis Granulomatous lymphocytic ILD and others	*Follow PFL*
- **Other diffuse interstitial lung diseases:** *Familial interstitial pneumonias* (surfactant mutations(SP-A, SP-C, ABCA3, etc), Hermansky-Pudlak and other) *Erdheim-Chester disease and other histiocytoses* Lymphangiomatosis and generalized lymphatic anomalies *Amyloidosis* Pulmonary alveolar proteinosis *Radiation-induced ILD* *Constrictive bronchiolitis (idiopathic and toxic exposure-induced)* Drug-induced ILD	*Follow PFL*
- **Diffuse cystic lung diseases:** Lymphangioleiomyomatosis Langerhans cell histiocytosis Birt-Hogg-Dube syndrome Follicular bronchiolitis and cystic LIP Light-chain deposition disease, neurofibromatosis, Marfan syndrome, and other DCLDs	*Follow PFL*

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On

call -based learning. JC: Journal club

Neoplasm of the lung	
Primary Focus in Learning (PFL)	
Epidemiology, Pathophysiology, Classification, Etiology, Manifestations, Diagnostic approach, Assessment of severity, Complications, Acute and Chronic Management, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Benign lung neoplasms	Differentiation of types, diagnostic approach, management
Malignant lung neoplasms Non-small cell lung cancer Small cell lung cancer Carcinoid tumors Adenoid cystic carcinoma	Diagnostic approach and management
Techniques for diagnosis and staging	Approach and guidelines
Mediastinal neoplasms	Differential diagnosis, diagnostic approach, and management
Metastatic lung tumors	diagnostic approach and management
Lung nodules	Diagnostic approach and management guidelines
Pleural neoplasms	Differentiation of types, diagnostic approach, management
Complications Paraneoplastic syndromes Superior vena cava syndrome	Diagnostic approach and management
Preoperative assessment	Approach and guidelines
Lung cancer screening	

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Pulmonary Vascular Diseases	
Primary Focus in Learning (PFL)	
Epidemiology, Pathophysiology, Classification, Etiology, Manifestations, Diagnostic approach, Assessment of severity, Complications, Acute and Chronic Management, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Pulmonary hypertension Pulmonary arterial hypertension Chronic thromboembolic disease	Classifications, diagnostic, monitoring and management
Pulmonary vasculitis	Primary and secondary, small, medium and large vessels, diagnostic and Treatment approach
Pulmonary thromboembolic disease	Pathogenesis, causes, diagnostic approach and criteria, acute and chronic management complications,

	anticoagulation and thrombolytic therapy, monitoring, and follow-up.
Diffused alveolar hemorrhage syndromes	Etiology, diagnosis, acute interventions, and management
Pulmonary vascular malformations Pulmonary arteriovenous malformation Hepatopulmonary syndrome	Diagnostic approach and management
Sickle cell disease	Diagnostic approach and management

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Pulmonary Infection	
Primary Focus in Learning (PFL)	
Epidemiology, Pathogenesis, Manifestations, Diagnostic approach, severity, Complications, Management, Prevention, Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Pneumonia Community acquired ventilator-associated health care-associated Aspiration pneumonia	Microbiology, clinical presentation, diagnosis, severity and complication, guidelines, treatment, and prevention.
Lung abscess	Pathophysiology, microbiology, diagnosis and investigations, complications, and treatment
Fungal infection	Clinical presentation, severity, diagnosis and treatment.
Mycobacterial tuberculosis	Transmission, pathogenesis, risk factors, prevention, tuberculin skin test, clinical manifestation, diagnosis, imaging, and management
Non-mycobacterial tuberculosis	Epidemiology, transmission, clinical presentation, diagnosis, and management.
Infections in an immunocompromised HIV infected patient solid organ transplantation bone marrow transplantation	Spectrum of pulmonary manifestations, microbiology, diagnostic approach, and management.
HIV related Lung complication	Immunologic abnormalities, spectrum of pulmonary manifestations, CD4+ count and HIV-associated pulmonary disease , noninfectious related pulmonary complication, management, and prevention.
Vaccination (Pneumococcus and flu vaccination)	Clinical indications, side effects, and recommendations.

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Pleural Diseases	
Primary Focus in Learning (PFL)	
Epidemiology, Pathogenesis, Manifestations, Diagnostic approach, severity, Complications, Management, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Pleural effusion Transudative Exudative Trapped lung and lung entrapment	Diagnostic approach and management
Empyema	Clinical presentation, diagnostic approach, and management
Pleural malignancy	Clinical presentation, diagnosis, and management.
Pleural asbestosis	Clinical presentation, diagnosis, and management
Pneumothorax Primary spontaneous Secondary	Indications, classification, diagnosis, causes, management, and outcomes
Pleurodesis	The indications, contraindications, choice of sclerosant, procedure, and complications.
Diagnostic and therapeutic procedures Thoracentesis Pleuroscopy Chest tubes Tunneled pleural catheters	The indications, contraindications, technique, and complications

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Congenital, Neuromuscular, and Skeletal Abnormalities:	
Primary Focus in Learning(PFL)	
Epidemiology, Pathophysiology, Classification, Etiology, Manifestations, Diagnostic approach, Assessment of severity, Complications, Acute and Chronic Management, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
General principles	Pathophysiology, physiological changes, pulmonary function test, and principles of NIPPV
Congenital Azygous fissure Bronchogenic cyst Ciliary dyskinesia Cystic adenomatoid malformation Sequestration Diaphragmatic disorder Immunodeficiencies Mediastinum disorders Neurofibromatosis Sickle cell anemia Thoracic cage abnormalities	Clinical features, diagnosis, and management
Neuromuscular Guillain-Barré syndrome Chronic inflammatory demyelinating polyneuropathy (CIDP) Myasthenia gravis Lambert–Eaton syndrome Botulism Organophosphate poisoning Critical illness myopathy (CIM) and critical illness polyneuropathy (CIP) Amyotrophic lateral sclerosis (ALS)	Clinical features, supportive respiratory care, and management
Thoracic cage abnormalities Pectus Excavatum Pectus Carinatum Kyphoscoliosis	Clinical features, physiological changes, pulmonary complications, and management
Obesity	Clinical features, physiological changes, pulmonary complications and management

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Primary Focus in Learning (PFL)

Epidemiology, Pathogenesis, Manifestations, Diagnostic approach, severity, Complications, Management, Prevention, and Prognosis

Venue

AHD, SDL, CBL, OBL, and JC

Presenting Problems	***Specific Underlying Key Conditions and Problems***
Pneumoconiosis Asbestosis Berylliosis Coal-workers' pneumoconiosis, hard metal pneumoconiosis, Silicosis	Clinical presentation, diagnostic approach, and management
Toxic inhalations Carbon monoxide Organic agents Endotoxin Smoke inhalation Metal fume fever Other toxic exposures (dust, cobalt)	Clinical presentation, Diagnostic approach, and management
Occupational asthma and work-exacerbated asthma	Clinical presentation, diagnosis, and management.
Barometric- or thermal-related disorders	Clinical presentation, diagnosis, and management
Tobacco use treatment and smoking cessation	Management, and outcomes
Environmental cancer risk	

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Critical Care	
Primary Focus in Learning (PFL)	
Epidemiology, Pathogenesis, Manifestations, Diagnostic approach, severity, Complications, Management, Prevention, and Prognosis	
Venue	
AHD, SDL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Respiratory failure due to: Obstructive lung disease, Parenchymal lung disease, Neuromuscular disorders, Disorders of central drive or the chest wall, Benign and malignant neoplasms of the lung and airways	Evaluation, diagnosis, management, and ventilator management.

Shock Hypovolemic Cardiogenic Obstructive distributive causes	Evaluation and, mechanical support, vasoactive drugs, management. Hemodynamics' interpretation obtained from pulmonary artery catheterization
Sepsis and septic shock	Criteria, evaluation, diagnosis, and management
Acute respiratory distress syndrome (ARDS)	Definition, diagnosis, causes, mortality risk, treatment, and ventilator management.
Endotracheal intubation and airway assessment	Indication of intubation, difficult airway assessment, and management
Other critical care related topics	GI bleeding, renal failure, strokes, delirium, epilepsy, brain death, coagulopathy, infections, antibiotics, oncology/hematological emergency, electrolytes imbalance, transfusion, myocardial infarction, Pulmonary edema, heart failure, hypertension management, drugs overdose and withdrawal, anaphylaxis, etc.
Environmental injuries Near-drowning Carbon monoxide poisoning Radiation injury Inhalation injury	evaluation, diagnosis, and management
ACLS/BLS	Evaluation and management

Ventilator Management:
Indications: Invasive positive pressure ventilation
Modes of ventilation and monitoring
Interaction between the lung and the ventilation
Complication of mechanical ventilation
Positive end-expiratory pressure (PEEP), Auto PEEP
Weaning from ventilation
Non-invasive ventilation (CPAP, Bilevel positive airway pressure (BiPAP)): indication, contraindication, monitor, and adjustment.

AHD: Academic half-day activities, SDL: Self-directed learning, OBL: On call -based learning. JC: Journal club

Sleep Medicine	
Primary Focus in Learning (PFL)	
Epidemiology, Pathophysiology, Classification, Etiology, Manifestations, Diagnostic approach, Assessment of severity, Complications, Appropriate Management, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Sleep physiology	Sleep physiology, neurotransmitters, and physiological changes during sleep,

Polysomnography	Indications, interpretation, scoring, and scales
Obstructive sleep apnea	Risk, sing and symptoms, diagnosis, complications, management, and devices
Central hypoventilation	Diagnosis, pathophysiology, characteristics, and treatment.
Complex sleep apnea	Features, causes, mechanisms, and management
Obesity hypoventilation syndrome	Pathophysiology, features, diagnosis, and management
NIV therapy	Types, features, indications, and alternatives
NONRESPIRATORY SLEEP DISORDERS:	
Hypersomnia	(**Narcolepsy, idiopathic hypersomnia, etc.)**: Features, diagnosis, types, and management
Restless leg syndrome	Periodic Limb movement, disorders Etiology, diagnosis, and treatment
Parasomnia	Types and management
Circadian rhythm disorder	Delay, Advanced phase syndromes, Shift work, and Jet lag
Insomnia	Diagnosis, causes, and management
Sleep-related medical disorder	Sleep related lung diseases, neuromuscular disease, and musculoskeletal disease

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Lung Transplant:	
Primary Focus in Learning (PFL)	
Epidemiology, Pathogenesis, Manifestations, Diagnostic approach, severity, Complications, Management, medications side effect, Prevention, and Prognosis	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions Problems***
Indication and patient selection	Disease specific indications, criteria
Recipient selection and contraindications	
Choice of surgical procedure	Single lung transplant vs double lung transplant vs heart-lung transplant
Donor selection and organ allocation	
Transplant immunosuppression	Agents, mechanism of action, and side effects
Complication post-transplant	Primary graft dysfunction (PGD) and airway/anastomotic complications
Rejection	Acute rejection (AR), chronic rejection/bronchiolitis obliterans syndrome (BOS), antibody mediated rejection (AMR)
Infection	

Post-Transplant Lymphoproliferative disrobes and other malignancy
Outcome of lung transplant

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Pulmonary Function Test	
Primary Focus in Learning (PLF)	
Indications of the tests, physiological concept for each test, maneuvers of real procedure practice, the guidelines of preforming tests, diagnostic approach, classification and severity, contraindication of the tests, follow up, and approach to PFT Interpretation	
Venue	
AHD, SDL, CBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Spirometry	Key features of **obstructive** vs **restrictive** lung disease, **flow- volume loop**, **flow-time loops**, differential diagnosis, and **severity**.
Lung volumes	Key features of **obstructive** vs **restrictive** lung disease, differential diagnosis, and **severity**.
Gas transfer	Differential diagnosis, severity, deferent methods, and its correction factor.
Bronchial challenge testing	Indications, methods (direct vs indirect tests), choosing of test, and interpretation of results.
Respiratory muscle function tests	Indications, methods, diagenetic approach for underlying test, and definition of the severity of the diseases
Cardio-pulmonary exercise testing	Indications, methods, contraindications, Interpretation results, and differential diagnoses
Arterial blood gas interpretation	**Stepwise approach of reading ABG test** and its implication, and A-a gradient (its calculation and implications)

AHD: Academic Half Day Activities, SDL: Self-Directed learning, CBL: Clinic based learning, JC: Journal Club

Thoracic Radiology	
Primary Focus in Learning (PLF)	
Definition, presentation, classification, Stages, and Guidelines	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Essential anatomy	• Consolidation and ground glass, interlobular septal thickening, and Crazy paving
Atelectasis	• Lobar and local
Emphysema	• Centrilobular, paraseptal, and panacinar
Approach to multiple nodules	• Centrilobular nodules, perilymphatic nodules, and random nodules • Tree-in-bud nodules
Cavitary and cystic lung disease	• Cavitary Lung disease and cystic lung diseases
Fibrotic changes	• Lower lobe fibrotic changes and upper lobe fibrotic changes
Pulmonary infection	• Radiographic patterns of infection, complications of pneumonia, infections in the immunocompromised, and Pneumocystis jiroveci pneumonia (PCP) • *Aspergillus: Allergic* bronchopulmonary aspergillosis (ABPA), aspergilloma, invasive aspergillosis
Tuberculosis	• Primary, reactive, milliary, atypical mycobacteria, and non-tuberculous mycobacteria
Pulmonary edema	• Cardiac and etiology
Lung cancer	• Solitary pulmonary nodule (SLN) • Adenocarcinoma, squamous cell carcinoma (SCC), bronchioloalveolar carcinoma (BAC), small cell carcinoma, carcinoid tumor, and staging of lung cancer
Pulmonary vascular disease	• Pulmonary hypertension, pulmonary embolism (PE), • Pulmonary vasculitis
Diffuse lung disease	• Idiopathic pulmonary fibrosis (IPF), nonspecific interstitial pneumonitis (NSIP), cryptogenic organizing pneumonia (COP), respiratory bronchiolitis–interstitial lung disease (RB-ILD), desquamative interstitial pneumonia (DIP), lymphoid interstitial pneumonia (LIP), acute interstitial pneumonia (AIP), hypersensitivity pneumonitis (HSP), drug toxicity, radiation lung injury, sarcoidosis, pulmonary Langerhans cell histiocytosis (PLCH), pulmonary alveolar proteinosis (PAP), and lymphangioleiomyomatosis (LAM)
Pulmonary vascular disease	• Pulmonary hypertension, pulmonary embolism (PE), and pulmonary vasculitis
Mediastinum	• Anterior mediastinum , middle mediastinum , and posterior mediastinum
Pleural	• Malignancy, effusion, and pneumothorax

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Thoracic surgery	
Primary Focus in Learning (PLF)	
Epidemiology, Etiology, Manifestations, Diagnostic **approach and management, Complications,** Prognosis **and outcome.**	
Venue	
AHD, SDL, CBL, OBL, and JC	
Presenting Problems	***Specific Underlying Key Conditions and Problems***
Airway disease and surgical intervention	
Lung nodules	Diagnosis and intervention
Lung malignancy	Diagnosis and intervention, and staging.
Lung fibrosis	Diagnostic approach
Pleural disease	Malignancy, effusion, intervention, and biopsy
Pleurisies	Indication, complication, and follow up
Complication of surgical intervention	Diagnosis and management
Chest trauma, lung contusion	Diagnosis and management
Pneumothorax	Diagnosis and management

AHD: Academic half-day activities, SDL: Self-directed learning, CBL: Clinic-based learning, OBL: On call -based learning. JC: Journal club

Appendix B: DIRECT OBSERVATION OF PROCEDURAL SKILLS (DOPS)

ASSESSMENT FORM

Trainee's name		**Registration no.**	
Observation		Registration no.	
Observed by		Date	
Signature of supervising doctor			

Description	Satisfactory	Unsatisfactory	Comment
Understood the indications for the procedure and clinical alternatives			
Clearly explained plans to the patient and explained potential risks in a way they understood			
Good understanding of theoretical background to procedure including anatomy, physiology and imaging			
Good advanced preparation for the procedure			
Communicated plan for procedure to relevant staff			
Awareness of risks of cross-infection and effective aseptic technique during procedure was demonstrated			
Procedure success or failure understood in the current setting			
Coped well with unexpected problems			
Skillful and handled patient and tissues gently			
Maintained accurate and legible records including descriptions of problems or difficulties			
Issued clear post-procedure instructions to patient and/or staff			
Sought at all times to work to the highest professional standards			
ASSESSMENT			
Practice was satisfactory			
Practice was unsatisfactory			
Examples of good practice were:			

Areas of practice requiring improvement were:

_____

_____

_____

Further learning and experience should focus on:

_____

_____

_____

Appendix C: Mini-Clinical Evaluation Exercise (Mini-CEX)

Definition

The mini-CEX is a 10-20 minute direct observation assessment or “snapshot” of a trainee-patient interaction. To be most useful, the evaluator should provide timely and specific feedback to the trainee after each assessment of a trainee-patient encounter.

Purpose

A mini-CEX is designed to:

- Guide the trainee’s learning through structured feedback
- Help improve communication, history taking, physical examination and professional practice
- Provide the trainee with an opportunity to be observed during interactions with patients and identify strategies to improve their practice
- Be a teaching opportunity enabling the evaluator to share their professional knowledge and experience

Trainee responsibilities

- Arrange a mini-CEX encounter with an evaluator
- Provide the evaluator with a copy of the mini-CEX rating form.

Evaluator responsibilities

- Choose an appropriate consultation for the encounter
- Use the mini-CEX rating form to rate the trainee.
- Provide constructive feedback and discuss improvement strategies. If a trainee received a rating which is unsatisfactory, the assessor must complete the “suggestion for Development” section

MINI-CLINICAL EVALUATION EXERCISE

MINI-CEX

Evaluator name:	Assessor position:	Date:
Trainee name:	Registration No.:	Residency level:

Brief summary of the case:

New: **Follow up:**

Setting for assessment:

Inpatient: Ambulatory: ICU: CCU: Emergency department: Others:

Complexity: **Low:** **Moderate:** **High:**

Focus: **Data gathering:** **Diagnosis:** **Therapy:** **Counseling:**

Assessment:

SCORE FOR STAGE OF TRAINING									
Questions	**Unsatisfactory**			**Satisfactory**			**Superior**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
History taking									
Physical examination skills									
Communication skills									
Critical judgement									
Humanistic quality/ Professionalism									
Organization and efficiency									
Overall clinical care									

Mini-CEX time: Observing: min Providing feedback: min

Evaluator satisfaction with Mini-CEX: Low 1 2 3 4 5 6 7 8 9 High.

Trainee satisfaction with Mini-CEX : Low 1 2 3 4 5 6 7 8 9 High.

Trainee Signature: **Evaluator:**

Remarks

Question	Description
History taking	Facilitates patient telling their story; effectively uses appropriate questions to obtain accurate, adequate information; responds appropriately to verbal and non-verbal cues.
Physical examination skills	Follows efficient, logical sequence; examination appropriate to clinical problem; explains to patient; sensitive to patient's comfort and modesty.
Communication skills	Explores patient's perspective; jargon free; open and honest; empathic; agrees management plan/therapy with patient.
Critical judgement	Makes appropriate diagnosis and formulates a suitable management plan; selectively orders/performs appropriate diagnostic studies; considers risks and benefits.
Humanistic quality/ Professionalism	Shows respect, compassion, empathy, establishes trust; attends to patient's needs of comfort; respects confidentiality; behaves in an ethical manner; awareness of legal frameworks; aware of own limitations.
Organization and efficiency	Prioritizes; is timely and succinct; summarizes.
Overall clinical care	A global **judgement**-based on the above question areas.

Appendix D: Case-based discussion (CBD)

Purpose

To evaluate the level of professional judgement exercised in clinical cases by the trainee.

CBD is designed to:

- Guide the trainee's learning through structured feedback
- Help improve clinical decision making, clinical knowledge and patient management
- Provide the trainee with an opportunity to discuss their approach to the case and identify strategies to improve their practice
- Be a teaching opportunity enabling the evaluator to share their professional knowledge and experience.

Overview

The CBD encounter involves a comprehensive review of clinical cases between a trainee and an evaluator. The trainee is given feedback from an evaluator across a range of areas relating to clinical knowledge, clinical decision making and patient management. The CBD encounter takes approximately 20-30 min.

Trainee responsibilities

- Arrange a CBD encounter with an evaluator.
- Provide the evaluator with a copy of the CBD rating form.

Evaluator responsibilities

- Choose the case(s) for discussion.
- Use the CBD form to rate the trainee.
- Provide constructive feedback and discuss improvement strategies.
- Provide an overall judgement on the trainee's clinical decision making skills.

Appendix E: END OF ROTATION EVALUATION FORM

Center:

Level of the trainee:

Name: _____ **Registration number:** _____

Rotation: _____ **Period:** _____

Program director: _____

	Clear failure (1)	Borderline (2)	Clear Pass (3)	Exceeds expectation (4)	Not applicable
A. Medical Expert					
Basic and clinical knowledge					
1. Understanding of the basic and clinical science and pathophysiology of common medical illnesses					
2. Understands the clinical presentation, natural history and prognosis of common medical illnesses					
3. Demonstrates expertise in all aspects of the diagnosis and management of common medical illnesses					
4. Practices contemporary, evidence based and cost-effective medicine					
5. Avoids unnecessary or harmful investigations or management					
6. Provides care to diverse communities					
7. Demonstrates the appropriate knowledge, skills, and attitudes relating to gender, culture, and ethnicity					
8. Completes an accurate history and physical examination					
9. Formulates appropriate differential diagnoses					
10. Develops an appropriate plan of investigation and interpret the results					
11. Develops a therapeutic plan					
12. Develops a plan of secondary prevention					
13. Demonstrates appropriate clinical judgement					

14. Demonstrates knowledge of the used medications; mechanisms of action, clinically relevant pharmacokinetics, indications, contraindications, and adverse effects					
Procedural skills					
15. Understands the indications, contraindications and complications of specific procedure					
16. Demonstrates a mastery of specific procedure techniques					
B. Communicator					
17. Writes appropriate progress notes; transfer and discharge summaries					
18. Communicates appropriately with junior medical, nursing and allied health staff					
19. Communicates appropriately with patients					
20. Communicates appropriately with patient families					
21. Establishes therapeutic relationships with patients/families					
22. Delivers understandable information to patients/families					
23. Provides effective counseling to patients/ families					
24. Maintains professional relationships with other health care providers					
25. Provides clear and complete records, reports, informed and written consent					
C. Collaborator					
26. Works effectively in a team environment					
27. Works effectively with allied health care staff					
28. Works effectively with nursing staff					
29. Works effectively with attending and junior medical staff					

30. Consults effectively with other physicians and other health care providers					
D. Manager					
31. Participates in activities that contribute to the effectiveness of their healthcare organizations and systems					
32. Manages their practice and career effectively					
33. Allocates finite healthcare resources appropriately					
34. Serves in administration and leadership roles, as appropriate					
35. Utilizes information technology to optimize patient care, life-long learning, and other activities					
E. Health advocate					
36. Attentive to preventive measures					
37. Demonstrates adequate patient education on compliance and role of medications					
38. Attentive to issues of public policy for health					
39. Recognizes important social, environmental and biological determinants of health					
40. Demonstrates concern that patients have access to appropriate supports, information and services					
41. Offers advocacy on behalf of patients at practice and general population levels					
F. Scholar					
42. Attends and contributes to rounds, seminars and other learning events					
43. Appropriately discusses present selected topics as requested					
44. Demonstrates adequate ability to search literature					
45. Demonstrates efforts to increase knowledge base					

46. Accepts and acts on constructive feedback						
47. Reads around patient cases and takes an evidence-based approach to management problems						
48. Contributes to the education of patients, house staff / students, and other health professionals						
49. Contributes to the development of new knowledge						
G. Professional						
50. Recognizes limitations and seeks advice and consultation when needed						
51. Understands the professional, legal and ethical obligations of physicians						
52. Delivers evidence based care with integrity, honesty and compassion						
53. Demonstrates appropriate insight into own strengths and weaknesses						
54. Exercises initiative within limits of knowledge and training						
55. Discharges duties and assignments responsibly and in a timely and ethical manner						
56. Reports facts accurately, including own errors						
57. Maintains appropriate boundaries in work and learning situations						
58. Respects diversity of race, age, gender, disability, intelligence and socio-economic status						
Total Score	Total score = ---------- ---------- X 25 = 100% Number of evaluated items =					

Comments:

I certify that I have read all the parts of this evaluation report, and I have discussed it with the evaluators

Fellow name: _____ **Signature:** _____

Evaluator name: _____ **Signature:** _____

Evaluator name: _____ **Signature:** _____

Program director: _____ **Signature:** _____

Appendix F: Fellow Presentation Evaluation by Staff Supervisor

Fellow name: _____ **Level:** _____

Staff Supervisor: _____

Date of Presentation: _____

Topic: _____

Please use the following scale to evaluate the presentation:

Very weak	Weak	Acceptable	Good	Very good
1	2	3	4	5

Medical Expert	1	2	3	4	5
- Demonstrated thorough knowledge of the topic					
- Presented at an appropriate level and with adequate details					
- Comments (Optional)					
Communicator					
- Provided objectives and an outlines					
- Presentation was clear and organized					
- Used clear, concise and legible materials					
- Used an effective methods /style of presentation					
- Established good rapport with the audience					
Collaborator					
- Invited comments from learners and led the discussion					
- Worked effectively with staff supervisor in preparing the session					
- Comments (Optional)					
Health advocate					
- Managed time effectively					
- Addressed preventive aspects of care if relevant					
- Comments (Optional)					
Scholar					
- Posed an appropriate learning questions					
- Accessed and interpreted the relevant literature					
- Comments (Optional)					
Professional					
- Maintained patients confidentiality if clinical material is used					
- Identified and managed relevant conflict of interest					
- Comments (Optional)					

Evaluation of the Different Components of the Core Curriculum by the Fellow

Fellow name: _____ **Level:** _____

Staff Supervisor: _____

Date of Session: _____

Name Session: _____

1- How would you evaluate the value of this session?
   1 = Very weak, 2 = Weak, 3 = Acceptable, 4 = Good, 5 = Very good

2- Did this session meet your educational needs?
   1 = Very weak, 2 = Weak, 3 = Acceptable, 4 = Good, 5 = Very good

3- Should this session be continued in the future? Yes No
4- At which level should this session be aimed? _____
5- At which time of the year should this session be conducted? _____
6- Have you had an opportunity to practice this skill? Yes No
7- Is there any suggestions to make this session better?

_____

_____

_____

_____

_____

_____

_____

Appendix G: Example of Blueprint for Progress test (F1) and Final Written Exam (F2)

Sections	No. of Items F1	No. of Items F2
Obstructive airway diseases	20	20
Interstitial and inflammatory lung diseases	10	10
Occupational and environmental lung diseases	3	3
Infections	10	9
Neoplasm	10	10
Pleural diseases	6	6
Sleep medicine	2	4
Congenital, neuromuscular and skeletal abnormalities	4	4
Vascular diseases	4	4
Transplantation	0	2
Basic science and physiology	10	8
Critical care medicine	15	15
Ethics, research and patient safety	6	5
Total	100	100