

# SAUDI COMMISSION FOR HEALTH SPECIALTIES



Science Board of Internal Medicine

**البرنامج التدريبي  
(شهادة الإختصاص  
السعودية للأمراض الصدرية)**

**TRAINING PROGRAM FOR  
THE SAUDI SPECIALTY IN  
RESPIRATORY MEDICINE**

**2<sup>nd</sup> Edition  
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## **1. INTRODUCTION**

In The Kingdom of Saudi Arabia, medical services are flourishing and there is great demand for skilled pulmonologists in any general hospital. Furthermore, frequent requests for establishing a postgraduate training in the field of pulmonary medicine has come from different sources. Unless an organized program is established nationwide, hospital-based and individual efforts are not optimal and usually fruitless. A well-structured program under the supervision and accreditation of the Saudi Council for Health Specialties (SCFHS) will ensure a uniform standard of solid and advanced training all over the country, which will encourage more candidates to enrol in the field of pulmonary medicine.

## **2. OBJECTIVES:**

The objective of the Saudi Specialty Training Program in Respiratory medicine is to provide candidates with learning experiences which will ensure that they will be competent in the discipline of clinical pulmonology with special skills in the diagnosis and management of adult respiratory disorders at a specialist level. Specifically, candidates at the end of their training will be able to perform the following skills in a manner expected from a pulmonary specialist :

- \* Deal with common and rare pulmonary diseases.
- \* Able to perform diagnostic and selected therapeutic bronchoscopies, and common procedures in pulmonary medicine.
- \* Able to understand the physiology of the lung including lung mechanics, gas exchanges in normal and diseased lungs.
- \* Able to understand the physiology of various pulmonary diseases and its systematic effects.

- \* Able to perform the procedures of pulmonary function test, quality assurance of pulmonary laboratory, and to know the interpretation of pulmonary function tests, exercise tests, and arterial gas analysis.
- \* Manifestations of systemic diseases in the lungs.
- \* Able to deal with critical pulmonary cases in the ICU, initiation, titration, weaning from mechanical ventilation and trouble shooting in mechanically ventilated patients.
- \* Understand the basic pathology of pulmonary disease.

### **3. PROGRAM STRUCTURE:**

#### ***3.1 Admission Requirements:***

According to the requirements of the SCFHS rules and regulation, the candidate can be admitted to the program provided the following conditions are met. The candidate must

- \* Possess a certificate of the Saudi Board in Internal Medicine or (an equivalent and a recognized degree by SCFHS) or have successfully completed the written component of the Final Saudi Board in Internal Medicine examination. The candidate will not be allowed to have the final board examination in pulmonary medicine until the Final Saudi Board for Internal Medicine examination in all its components is already cleared.
- \* Pass successfully an interview and/ or a selection examination.
- \* Provide 3 letters of recommendations from 3 consultants with whom the candidate has recently worked with, for a minimum of six months, to be sent directly to the chairman of the scientific committee.
- \* Register annually at the SCFHS for this program and pay the annual registration fee.

- \* Provide a written permission (a release letter) from the sponsoring institution of the candidate allowing him/her to participate, on full time basis, for the entire period of the program (two years).
- \* Adhere with the rules and regulations of the SCFHS.

### **3.2 Duration and structure of the training period**

The specialty program is 2 years duration {24 months}. Third year is optional for critical care training if the candidate prefers to have dual qualification in respiratory medicine and ICU. The candidate will then obtain for critical care. Likewise a candidate who finished two years of critical care training can do one more year in pulmonary training and then he/she can obtain double qualification of both pulmonary and critical care medicine provided that his/her background training was internal medicine. The structures of the program over 2 year's duration will be the following:

- \* 13 months of clinical pulmonary (wards, consultations and procedures).
- \* 2 months vacation (30 days per year of training) plus one week Eid holiday/year.
- \* 3 Months CCU (in an accredited CCU training center)
- \* 1 months laboratory rotation (PFT, Exercise, {CPET}, Sleep, Lab, Rehab).
- \* 1 month thoracic surgery and pathology.
- \* 1 month radiology.
- \* 3 month electives to be done in a selected interest provided it is approved by the training committee.

**Note : The training committee will be responsible for preparing the timetable and rotations for all participating candidates. Candidates will rotate between assigned hospitals regardless of their original hospital affiliation as stated by the SCFHS regulations.**

### **3.3 Vacations**

The fellow is entitled to 1 month vacation and one week Eid holiday per year of training. Education leave of not more than one week/year is arranged internally within the rotations. The educational leave should be in the field of pulmonary medicine and should be approved by the program director and service's head. The fellow must provide certificate of attendance or it will result in subtracting these days from his/her regular vacations.

## **4 RESPONSIBILITIES OF THE FELLOW:**

Regardless of the level of training and/or competency, fellows are neither independent practitioners nor specialist. They are pursuing their objectives towards independence in a graded fashion providing health care service under appropriate supervision of their assigned clinical teachers. The final goal of the program is to bring all trainees to the point where they can act independently and demonstrate special competence in pulmonary medicine.

The following highlight the responsibilities of the fellows:

### **4.1 Outpatient Service:**

- \* The fellow will have opportunity to see and follow pulmonary cases through outpatient clinics under supervision of the assigned pulmonologist.
- \* He/she should attend at least two clinics per week over the period of 2 years including elective periods, except during rotation in the ICU.
- \* His/her responsibilities during outpatient clinic is to see new patients, take history, physical examination, review the appropriate investigations and put forward the management plan which will be reviewed and approved by the consultant pulmonologist.
- \* He/she will continue follow up of patients seen in subsequent visits to the clinic, under supervision of the consultant.

#### **4.2 Inpatient and Consultation Services:**

- \* It is the responsibility of the fellow to attend all bedside rounds on inpatients with the consultant according to the department policy, in addition fellows should do their own rounds with the junior members of the team on a daily basis.
- \* The fellow will see all consultations referred to the service at any time during the day and when he/she is on call.
- \* Fellows will assess the patients initially and put forward the appropriate preliminary investigations and therapy thereafter discuss the case with the consultant on call in the same day to arrange for further action.
- \* It is the responsibility of the fellow to follow up all consultations to the pulmonary service and discuss them with the assigned consultant.

#### **4.3 On call:**

- \* The fellow will take 10-15 calls per month from home except when having a rotation in the critical care.
- \* During the on call he/she will be the first to be contacted, to see and deal with any problems referred to the service.
- \* It is the responsibility of the fellow to inform the consultant on call about any consultation referred to the service.

#### **4.4 Participation of the fellows in teaching activities:**

The fellow is expected to be fully involved in the activities of the pulmonary division including Participation on morning rounds, combined chest rounds, chest club and different lectures to medical residents. Specifically the following activities are performed:

- \* Attend morning medicine meeting and share his/her knowledge with members of medical department and medical residents.

- \* Weekly combined chest round is assigned to discuss interesting and problematic cases with the members from pulmonary, ICU, thoracic surgery, radiology services and pathology department. Therefore, it is expected from the fellow to prepare all cases he/she was involved in taking care of them. This includes patient clinical data, investigations, radiology and management plan. It is expected from him/her to bring all patient information, and give a brief presentation.
- \* Participate actively in chest club in the same manner described above.
- \* Participate in resident teaching activities; in the form of approaches to common respiratory problems, MCQs sessions, bedside teaching and supervising resident rotating in pulmonary service.

## **5. PULMONARY PHYSIOLOGY LABORATORY ROTATION**

The fellow will spend the designated rotation time at the pulmonary function tests laboratory. The responsibilities of the fellow during his/her rotation in pulmonary physiology lab will be the following:

- \* Attend all procedure.
- \* Take brief clinical information from the patients.
- \* Do some procedures under supervision of the technician.
- \* Know indications and contra indications of each test.
- \* Understand and apply national and international guidelines for each test including the acceptability and reproducibility of the procedures.
- \* Understand and apply the national and international guidelines regarding quality assurance and supervision of the procedures.
- \* Do preliminary interpretation of pulmonary function test and pulmonary exercise test and discuss them with the pulmonary consultant assigned to the service.

## **6. PROCEDURES**

### **6.1 Bronchoscopy**

Bronchoscopy is an essential part of pulmonary training program. The candidate should acquire the skills to perform a diagnostic and limited therapeutic bronchoscopies in ways and means that are expected from a pulmonary specialist. The minimal procedures that the fellow is expected to acquire such skills during his/her 2 years training is 50 bronchoscopies. (including bronchoscopies done in CCU)

For the candidate to meet the above requirement it is expected from him/her to do the followings:

- \* Should know the indications and contraindications of the procedure.
- \* Know the complications that could happen to the patient during and after the procedures and how to deal with it.
- \* Arrange for the bronchoscopy after discussion with the pulmonary consultant on call.
- \* Should write the premedications and signs the consent form.
- \* Trainees should be in the bronchoscopy suit ahead of the consultant and upon the patient arrival to the bronchoscopy room.
- \* He/she should know the procedures of local anesthesia and preparation of the patient to the bronchoscopy.
- \* It is responsibility of the fellow to carry the preparation (local anesthesia) of the patient for bronchoscopy under supervision. (The fellow should prepare Minimum of 20 patients).
- \* No matter how skilled the fellow, he/she should know that it is absolutely prohibited to start the bronchoscopy without the physical presence of pulmonary consultant.

## **6.2 Other Procedures**

- 6.2.1 Pleurocentesis
- 6.2.2 Pleural biopsy (optional as most they do not do only VAT)
- 6.2.3 Pleurodesis
- 6.2.4 Chest tube insertion and removal
- 6.2.5 Placement of arterial and pulmonary artery balloon floating catheter.
- 6.2.6 Calibration and interpretation of hemodynamic data.
- 6.2.7 Upper airway management and intubation.

The fellow should gain skills and experience in performing the above procedures. Although the number of procedures to gain skills is variable, it is important that minimal of 10 procedures are required to gain such experience. The candidate must know the indications, contraindications, and complications of each procedures. should always be done under supervision of the pulmonary consultant, intensivist or thoracic surgeon.

## **7. CURRICULUM**

The candidate should know the following subjects in great depth including definition, etiology, pathology, pathogenesis, physiological changes, clinical features, appropriate investigations, radiological features, management and prognosis of the following subjects.

### ***Airway diseases including:***

- \* Upper airway obstruction
- \* Sinusitis
- \* Allergic rhinitis
- \* Bronchial asthma
- \* Chronic bronchitis, emphysema
- \* Bronchiolitis
- \* Bronchiectasis
- \* Reactive airway disease
- Vocal cord disorders
- Smoke inhalation

***Interstitial lung disease including:***

- Idiopathic lung fibrosis
- BOOP
- Sarcoidosis
- Histocytosis
- Lymphangiomyomatosis
- Drugs induced lung diseases
- Hypersensitivity pneumonitis
- Occupational lung diseases
- Vasculitis (Wagener's disease, GPS etc)
- Complications of connective tissue diseases

***Neoplasm of the lung***

- Lung tumors primary and secondary (benign and malignant)

***Pulmonary vascular disease:***

- Thromboembolism
- Pulmonary haemorrhage
- Pulmonary hypertension primary and secondary
- Pulmonary vasculitis

***Pleural disease:***

- Pleural effusion
- Pleurisy
- Pneumothorax
- Empyema
- Pleurodesis
- Pleural malignancy

***Respiratory failure:***

***Primary ventilatory disorders***

- Central Hypoventilation
- Obesity Hypoventilation Syndrome

***Secondary ventilatory disorders (acute and chronic)***

- Lung parenchymal disease (ARDS, etc)
- Neuromuscular disease
- Musculoskeletal disease

***Pulmonary infection including:***

- Normal host  
Pneumonia (community acquired, hospital acquired, ventilator associated pneumonia)  
Tuberculosis  
Fungal infection  
Tropical lung disease  
Aspiration pneumonia
- Pneumonia in the immunocompromised host
- Vaccination (Pneumovax and flu vaccination)

***Ventilator Management***

- Indications
- Indications between the lung and the ventilation
- Different Modes of ventilation
- Complication of mechanical Ventilation
- PEEP
- Non-invasive ventilation (CPAP. BiPAP)

***Others:***

- Sepsis and SIRS
- ARDS
- Lung collapse
- Effect of systemic disease on respiratory system
- Oxygen therapy
- Carbon monoxide poisoning
- Smoke inhalation
- Hypoxia
- Hypercapnia
- Methahemoglobinemia
- Congenital disease

**Anatomy :**

- Anatomy of the lung, rib cage and diaphragm

**Physiology:**

- Mechanics of lungs
- Physiology of gas exchange
- Physiological changes in different lung diseases, Ventilation control (ventilatory response to hypoxia and hypercapnia)
- Physiology of pulmonary exercise test
- Pathogenesis of hypoxia and hypercapnia
- Cardiopulmonary interaction in normal and diseased lung
- Oxygen and carbon dioxide dissociation curve
- Oxygen carrying capacity
- Shunt Physiology and equation
- Physiology of sleep
- Gases exchanges and ventilatory control during sleep

**8. TEACHING ACTIVITIES:**

- Special lectures and tutorials will run through the period of training: there must be one lecture/tutorial per week designed specially to educate pulmonary fellows in advanced pulmonary medicine, physiology and problem solving. Attendance is a must and failure to attend without accepted reason is reported by the program director to the training committee.

The following educational activities are encouraged:

- Journal club presented by the fellow at the least once a month.
- Weekly combined chest round
- Daily morning medicine meeting.
- Monthly Regional chest club meetings
- Educational leaves 1week/year.

## 9. RESEARCH

Fellows are encouraged to be involved in research activities in their own time during the two-year training.

## 10. ASSESSMENT:

### **10.1 Continuous Assessment.**

The evaluation of the fellows will be a continuous process throughout the program. The fellow will be assessed in the clinical judgement, medical knowledge, clinical skill {medical interview, physical examination, and procedure skills} humanistic quality, professionalism, and provision of medical care. This assessment will be documented at regular intervals according to the training schedule, after discussion among pulmonary service members. The aim of such assessment is to ensure feedback to the trainee as part of educational process and to substantiate the basis or delegating the load of responsibilities. All candidates should be given a copy of the periodic evaluation

### **10.2 A written (MCQs)**

MCQs (one-single-best type) is given in 2 different papers of 50 questions each. The aim of this evaluation is to test the knowledge of the fellow and prepare him/her for the final examination. **No candidate will be allowed to move the next level of training unless he/she successfully passes this examination.**

Note : According to the by laws of SCFHS, promotion of the fellow from one level to another is determined by:

- A) Passing the End-of-year Examination which can be either written or clinical.
- B) Passing overall performance evaluation of rotation.

## **11. FINAL EXAMINATION AND CERTIFICATION OF COMPETENCE**

To be eligible for entry for the final fellowship examination, the examination committee must receive a letter from the program director stating that the candidate had a satisfactory completion of all rotations during the 2 years of training and that the candidate has acquired the necessary skills and profession to act as a pulmonary specialist. Final Examination will be prepared and supervised by the training committee and consist of :

**Part-1 is written examination in the form of MCQs made up of 2 different papers at different times (one-best-single answer type of 50 questions each).**

**Upon successful passing of this examination the candidate will be allowed to sit for the 2<sup>nd</sup> part.**

**Part-2 is clinical (OSCE type exam with up to 10 stations covering clinical, radiological and laboratory aspects of pulmonary medicine. (including case scenarios, PFT's, ABGs etc.).**

*Note: According to rules and regulations of SCFHS; Passing score for each components of the examination is 60% or more , and passing score for the summative result for the two components should be 70% or more.*

Note: Two important points related to the examinations

1. A candidate has to pass the written exam of the end of the first year (passing mark is 60%) to be allowed to move to the second year training.

2. A candidate has to obtain a letter from his/her program director stating that his/her performance during the second year of training is satisfactory enter the final examination.

**Candidate will be awarded The Saudi Specialty degree in Respiratory Medicine Certificate according the rules and regulation of SCFHS. The name of the fellowship is "SF-PD" (Saudi Fellowship in Pulmonary Diseases).**

## **12. APPENDIX:**

### **12.1 Hospital Accreditation Criteria:**

#### **1. Hospital**

With the exception of university-based respiratory medicine programs, all other programs will be automatically replaced by this training program when a hospital is approved and recognized for the training. For a hospital to be accredited to offer a training program in the Saudi Specialty in Respiratory Medicine, or participate in such training, the following requirement must be fulfilled. The hospital must have:

1. A minimum of (3) qualified pulmonary consultants with a satisfactory experience in teaching and commitment to carry out the approved teaching and training program as stipulated by the program committee and the Saudi Commission for Health Specialties.
2. Active inpatient pulmonary service either separate or part of general internal medicine service.
3. A ratio of maximum one fellow for two pulmonary consultants per year is required to ensure an adequate clinical exposure and professional supervision.
4. A curriculum-based teaching activity, that are satisfactory to the program committee and should be designed so that each trainee will develop high quality practical and academic expertise.
5. Research-oriented activities, that allows the fellow sufficient exposure and participation are encouraged.
6. A minimum number of procedures that are performed in such hospital to be at least 50 for bronchoscopy and 10 for other procedures.
7. Rotations with other participating hospitals should be freely allowed and arranged through the program committee.
8. An active pulmonary service, dealing with various pulmonary disorders with sufficient diversity and skills as stipulated by the program committee including bronchoscopy, pulmonary function test laboratory, and supporting services (radiology, pathology and thoracic surgery).

## **2. Personnel:**

### **A) Program Director**

The program director must fulfill the following requirements:

- \* The program director must demonstrate commitment to the specialty.
- \* He/She must devote sufficient time to provide leadership to the program and supervision to the fellow in the program.
- \* He/She should maintain an active clinical involvement in the service, maintain continuing education and exhibit an active interest in research.
- \* The program director must be a consultant in pulmonary medicine as approved by SCFHS and must have at least 5 years experience post-approval.

The Program director will monitor the program contents and ensure the high quality of the program.

### **B) Consultants :**

The pulmonary division in any participating hospital should have minimum of two pulmonary consultants (as approved by SCFHS with at least 5 year experience post-registration). All of them should be full-time consultants with special training and experience in pulmonary medicine. They should be actively involved in clinical practice, teaching, and research.