



ACGME International

**Advanced Specialty Program Requirements for
Graduate Medical Education in
Respiratory Medicine
(Internal Medicine Pulmonary Disease)**

Revised: 2/12/2015, effective: 7/1/2016
Initial approval: 7/29/2013

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I Introduction

I.A. Definition and Scope of Specialty

The medical specialty of respiratory medicine (pulmonary disease) focuses on the etiology, diagnosis, prevention, and treatment of diseases affecting the lungs and related organs.

I.B. Duration of Education

I.B.1. The education program in respiratory medicine (pulmonary disease) must be 24 or 36 months in length.

II Institutions

II.A. Sponsoring Institutions

See International Subspecialty Foundational Requirements, Section I.A.

II.B. Participating Sites

See International Subspecialty Foundational Requirements, Section I.B.

III Program Personnel and Resources

III.A. Program Director

See International Subspecialty Foundational Requirements, Section II.A.

III.B. Faculty

III.B.1. Faculty members must teach and supervise the fellows in the performance and interpretation of procedures, and this must be documented in each fellow's record, including indications, outcomes, diagnoses, and supervisor(s).

III.C. Other Program Personnel

See International Subspecialty Foundational Requirements, Section II.C.

III.D. Resources

III.D.1. The following facilities must be available:

III.D.1.a) a pulmonary function testing laboratory;

- III.D.1.b) a bronchoscopy suite, including appropriate space and staffing for pulmonary procedures; and,
- III.D.1.c) critical care, post-operative care, and respiratory care services.
- III.D.2. The following laboratory and imaging services must be available at the primary clinical site:
 - III.D.2.a) a supporting laboratory to provide complete and prompt laboratory evaluation;
 - III.D.2.b) timely bedside imaging services for patients in the critical care units;
 - III.D.2.c) positron emission tomography (PET) scan and magnetic resonance imaging (MRI);
 - III.D.2.d) computed tomography (CT) imaging, including CT angiography; and,
 - III.D.2.e) nuclear medicine imaging capacity and ultrasonography.
- III.D.3. The following support services must be available:
 - III.D.3.a) a laboratory for sleep-related breathing disorders;
 - III.D.3.b) pathology services, including exfoliate cytology;
 - III.D.3.c) a thoracic surgery service; and,
 - III.D.3.d) other services, including anesthesiology, immunology, laboratory medicine, microbiology, occupational medicine, physical medicine and rehabilitation, otolaryngology, and radiology.
- III.D.4. There must be an average daily census of at least five patients per fellow during assignments to critical care units.

IV Fellow Appointment

IV.A. Eligibility Criteria

- IV.A.1. Prior to appointment in the program, fellows should have completed an ACGME International (ACGME-I)-accredited core specialty program in internal medicine.

IV.B. Number of Fellows

See International Subspecialty Foundational Requirements, Section III.B.

V Specialty-Specific Educational Program

V.A. Regularly Scheduled Didactic Sessions

- V.A.1. Fellows must have experiences that enable them to acquire knowledge regarding monitoring and supervising special services, including:
- V.A.1.a) pulmonary function laboratories, to include quality control, quality assurance and proficiency standards;
 - V.A.1.b) respiratory care techniques and services; and,
 - V.A.1.c) respiratory care units.
- V.A.2. Fellows must be given opportunities to assume continuing responsibility for both acutely- and chronically-ill patients, in order to learn both the natural history of respiratory medicine (pulmonary disease), and the effectiveness of therapeutic programs.
- V.A.3. Fellows must have experiences that enable them to acquire knowledge in the evaluation and management of patients with genetic and developmental disorders of the respiratory system.
- V.A.4. Fellows should have formal instruction about genetic and developmental disorders of the respiratory system, including cystic fibrosis.

V.B. Clinical Experiences

- V.B.1. At least 12 months of education must be devoted to clinical experience.
- V.B.1.a) Fellows should have 18 months of clinical experience.
- V.B.2. At least three months must be spent in the medical intensive care unit (MICU).
- V.B.3. At least nine months must be spent in non-critical care respiratory medicine (pulmonary disease) rotations.
- V.B.4. Fellows must have clinical experience in the evaluation and management of patients in pulmonary rehabilitation.
- V.B.5. Fellows must have clinical experience in tobacco prevention and cessation counseling.
- V.B.6. Fellows must have clinical experience in examining and recognizing the histologic changes of lung tissue, becoming familiar with pulmonary cytologic changes, and identifying infectious agents.
- V.B.7. Each fellow must perform:

- V.B.7.a) a minimum of 100 flexible fiber-optic bronchoscopy procedures, including those with endobronchial and transbronchial biopsies and transbronchial needle aspiration; and,
- V.B.7.b) central line placement.
- V.B.8. Fellows must participate in training using simulation.
- V.B.9. Fellows must have experience in the role of a respiratory medicine (pulmonary disease) consultant in both the inpatient and ambulatory settings.
- V.B.10. Fellows should have a structured continuity ambulatory clinic experience that exposes them to the breadth and depth of respiratory medicine (pulmonary disease).
- V.B.10.a) This experience should include an appropriate distribution of patients of each gender and a diversity of ages.
- V.B.10.b) This experience should average one half-day each week throughout the education program.
- V.B.10.c) Each fellow should, on average, be responsible for four to eight patients during each half-day session.
- V.B.10.c).(1) Each fellow should, on average, be responsible for no more than eight to 12 patients during each half-day ambulatory session.
- V.B.10.d) The continuing patient care experience should not be interrupted by more than one month, excluding a fellow's vacation.

V.C. Fellows' Scholarly Activities

See International Subspecialty Foundational Requirements, Section IV.C.

V.D. Duty Hour and Work Limitations

- V.D.1. Direct supervision of procedures performed by each fellow must occur until competence has been acquired and documented by the program director.

VI ACGME-I Competencies

VI.A. Patient Care

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows must demonstrate proficiency in:

- VI.A.1. the practice of health promotion, disease prevention, diagnosis, care, and treatment of patients of each gender, from adolescence to old age, during health and all stages of illness;
- VI.A.2. prevention, evaluation, and management of patients with:
- VI.A.2.a) acute lung injury, including inhalation and trauma;
 - VI.A.2.b) circulatory failure;
 - VI.A.2.c) diffuse interstitial lung disease;
 - VI.A.2.d) disorders of the pleura and the mediastinum;
 - VI.A.2.e) iatrogenic respiratory diseases, including drug-induced disease;
 - VI.A.2.f) obstructive lung diseases, including asthma, bronchiectasis, bronchitis, and emphysema;
 - VI.A.2.g) occupational and environmental lung diseases;
 - VI.A.2.h) pulmonary embolism and pulmonary embolic disease;
 - VI.A.2.i) pulmonary infections, including tuberculous, fungal infections, atypical mycobacterial infections, and those infections in the immunocompromised host (e.g., human immunodeficiency virus (HIV)-related infections);
 - VI.A.2.j) primary and metastatic pulmonary malignancy;
 - VI.A.2.k) pulmonary manifestations of systemic diseases, including collagen vascular disease and diseases that are primary in other organs;
 - VI.A.2.l) pulmonary vascular disease, including primary and secondary pulmonary hypertension and the vasculitis and pulmonary hemorrhage syndromes;
 - VI.A.2.m) respiratory failure, including acute respiratory distress syndrome, acute and chronic respiratory failure in obstructive lung diseases, and neuromuscular respiratory drive disorders;
 - VI.A.2.n) sarcoidosis; and,
 - VI.A.2.o) sleep-disordered breathing.
- VI.A.3. interpreting data derived from various bedside devices commonly employed to monitor patients, as well as data from laboratory studies related to sputum, bronchopulmonary secretions, and pleural fluid;

- VI.A.4. procedural and technical skills, including:
- VI.A.4.a) airway management;
 - VI.A.4.b) diagnostic and therapeutic procedures, to include thoracentesis, endotracheal intubation, and related procedures;
 - VI.A.4.c) emergency cardioversion;
 - VI.A.4.d) flexible fiber-optic bronchoscopy procedures, to include those with endobronchial and transbronchial biopsies and transbronchial needle aspiration;
 - VI.A.4.e) insertion of arterial and central venous catheters;
 - VI.A.4.f) operation of bedside hemodynamic monitoring systems;
 - VI.A.4.g) participation in a multidisciplinary team approach in the management of pulmonary malignancies and complicated asthma;
 - VI.A.4.h) pulmonary function tests to assess respiratory mechanics and gas exchange, to include spirometry, flow volume studies, lung volumes, diffusing capacity, arterial blood gas analysis, exercise studies, and interpretation of the results of bronchoprovocation testing using methacholine or histamine;
 - VI.A.4.i) use of a variety of positive pressure ventilator modes, to include:
 - VI.A.4.i).(1) initiation and maintenance of ventilator support;
 - VI.A.4.i).(2) respiratory care techniques; and,
 - VI.A.4.i).(3) withdrawal of mechanical ventilator support.
 - VI.A.4.j) use of chest tubes and drainage systems;
 - VI.A.4.k) use of reservoir masks and continuous positive airway pressure masks for delivery of supplemental oxygen, humidifiers, nebulizers, and incentive spirometry; and,
 - VI.A.4.l) use of ultrasound techniques to perform thoracentesis and place intravascular and intracavitary tubes and catheters.

VI.B. Medical Knowledge

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows must demonstrate proficiency in knowledge of:

- VI.B.1. the scientific method of problem solving and evidence-based decision making;
- VI.B.2. indications, contraindications, and techniques for, and limitations, complications, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indication for and use of screening tests and procedures;
- VI.B.3. imaging techniques commonly employed in the evaluation of patients with respiratory (pulmonary disease) or critical illness, including the use of ultrasound, radiography and CT of the chest, and PET scan changes for assessing pulmonary neoplasms;
- VI.B.4. the basic sciences, with particular emphasis on:
 - VI.B.4.a) genetics and molecular biology as they relate to respiratory medicine (pulmonary disease);
 - VI.B.4.b) developmental biology;
 - VI.B.4.c) pulmonary physiology and pathophysiology in systemic diseases; and,
 - VI.B.4.d) biochemistry and physiology, including cell and molecular biology and immunology, as they relate to respiratory medicine (pulmonary disease).
- VI.B.5. indications, complications, and outcomes of lung transplantation;
- VI.B.6. recognition and management of the critically-ill from disasters, including those disasters caused by chemical and biological agents;
- VI.B.7. insertion of pulmonary artery balloon flotation catheters;
- VI.B.8. the psychosocial and emotional effects of critical illness on patients and their families; and,
- VI.B.9. the ethical, economic, and legal aspects of critical illness.

VI.C. Practice-based Learning and Improvement

Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

VI.D. Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

VI.E. Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

VI.F. Systems-based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Fellows must:

VI.F.1. acquire skills required to organize, administer, and direct a critical care unit; and,

VI.F.2. acquire the skills required to organize, administer, and direct a respiratory therapy section.