UCLA-OLIVE VIEW INTERNAL MEDICINE RESIDENCY

PULMONOLOGY CURRICULUM

Target: PGY 1-3
Updated September 2018

A. EDUCATIONAL OVERVIEW

Residents on the pulmonary service are expected to gain a level of competence such that they can independently manage common lung diseases (as appropriate for the general internist) in hospitalized and clinic patients. For less common or more severe or complex cases, residents will be able to provide consultation with the supervision of a specialist, and learn when and how to appropriately consult or refer to specialty care.

B. ROTATION DESCRIPTION AND STRUCTURE

Training in pulmonology takes place at the Olive View-UCLA Medical Center, and spans the three years of training. It is composed of clinical experiences on the inpatient consult service and outpatient clinic. Rotations on the inpatient consult service are two weeks in length. Outpatient clinic is assigned during Ambulatory Medicine week and during the inpatient consult rotation. Trainees will care for patients with acute and chronic pulmonary diseases. Supervision is provided by the Pulmonary/Critical Care faculty and assisted by the Pulmonary/Critical Care fellow(s).

C. GOALS & OBJECTIVES

Residents are expected to achieve the common goals and objectives of clinical care (see separate document) in addition to the following objectives by the end of the rotation.

1. **Goal: Evaluate and manage acute and chronic presentations of cough, dyspnea, hemoptysis, and hypoxemia.**
   - Justify the differential diagnosis for these common pulmonary symptoms based on history, acuity, and physical examination. (PC1, MK1)
   - Differentiate the patient's signs and symptoms into airway, alveolar, parenchymal, pleural, vascular, or neuromuscular conditions. (PC1, MK1)
   - Order additional testing with a cost-effective approach to elucidate the etiology. (PC2, SBP3)
   - Appropriately triage patients based on symptom severity, including outpatient management or further inpatient evaluation. (PC2, PROF1)
   - Counsel patients regarding treatment and return precautions based on severity of their presenting symptoms. (PROF1, ICS1)
   - Refer appropriate patients for subspecialty care and or disease-specific management programs. (PC5, SBP1)

2. **Goal: Diagnose and treat patients with <u>obstructive lung disease</u> based on severity and symptomatology.**
   - Obtain a detailed history including the frequency of symptoms, exposures, prior interventions, medical history, and social history. (PC1, PROF1)
   - Accurately interpret spirometry and peak flow to determine severity of underlying disease. (PC1, MK2)

- Develop a plan specific to the patient's needs including education, inpatient hospitalization, and possible endotracheal intubation. (PC2, PROF3, ICS1)
- Identify other obstructive airway diseases based on history, imaging, and other diagnostic tests. (MK1/2, PC1)

3. **Goal: Appropriately identify and manage a variety of pleural diseases.**
   - Interpret history and physical exam findings to determine the need for and type of intervention. (PC1/2, MK1)
   - Explain the risks and benefits of invasive diagnostic testing as well as counsel the patient on possible further interventions. (MK1, PROF1, ICS1)
   - Perform a thoracentesis and interpret studies relevant to the differential diagnosis. (PC4, MK2)

4. **Goal: Diagnose, differentiate, and manage treatment for various pulmonary vascular diseases.**
   - Identify the risk factors, signs, symptoms, and severity of pulmonary embolism in patients. (PC1, MK1)
   - Select the most cost-effective and lowest risk strategy to diagnose or rule out pulmonary embolism. (PC1, MK1)
   - Describe the treatment algorithm for submassive and massive pulmonary emboli. (PC2, MK2, PBLI1)
   - Identify and evaluate pulmonary hypertension based on the World Health Organization (WHO) classification. (PC1, MK1)
   - Accurately interpret pulmonary function and six-minute walk testing to determine progression of vascular disease. (PC3, MK2)

5. **Goal: Evaluate and treat patients with restrictive lung disease based on severity, symptomatology, and comorbidities.**
   - Obtain a detailed history that includes the frequency of symptoms, exposures, prior interventions, medical history, and social history. (PC1, PROF1)
   - Identify Interstitial Lung Disease (ILD) as a complication of various chronic diseases including autoimmune, collagen-vascular, and occupational exposures. (PC1, MK2)
   - Explain the natural progression of interstitial lung disease and the role of lung transplantation as a possible treatment modality. (PC2, MK2, PROF1, ICS1)
   - Identify other risk factors for other restrictive lung diseases including obesity, neuromuscular disorders, and other chest wall abnormalities. (PC1, MK1)

6. **Goal: Appropriately diagnose and manage patients with lung nodules and malignancies.**
   - Order appropriate diagnostic testing and counsel patients appropriately for solitary pulmonary nodules based on the patient's risk of malignancy. (PC1, MK1)
   - Describe the risk factors for lung malignancies as well as the indications for lung cancer screening. (PC1/2, ICS1, PBLI1)
   - Select appropriate patients for lung cancer screening strategies. (PC2)
   - Counsel patients on tobacco cessation and risk reduction strategies. (PC2, ICS1, PROF3)
   - Differentiate the various histologic types of lung cancer based on presentation, risk factors, paraneoplastic syndromes, and prognosis. (PC2/5, MK2)

7. **Goal: Identify the complications and management of various sleep-related diseases.**
    - Obtain a focused history of the symptoms, medical history, current medications, and exposures to elucidate the etiology. (PC1, MK1)
    - Explain the meaning and interpret the results of the Apnea-Hypopnea Index (AHI), arterial blood gas (ABG), and CPAP. (PC1, MK2)
    - Recommend treatment based on a sleep study analysis. (PC1, MK2)
    - Develop a plan specific to the patient's needs and provide counseling regarding the risks, benefits, and medical compliance. (PC2, SBP1, PROF1, ICS1)

D. CORE TOPICS IN PULMONARY MEDICINE

By the end of the three-year training, the resident will be able to explain the differential diagnosis, general diagnostic approach, and management for the following signs, symptoms, conditions, and diseases: (MK1)

- Signs and Symptoms
    - Cough
    - Dyspnea
    - Hemoptysis
    - Hypoxemia
- Acute Respiratory Failure
    - Acute Respiratory Distress Syndrome (ARDS)
    - Status Asthmaticus
- Obstructive Lung Disease
    - Chronic Obstructive Pulmonary Disease (COPD)
    - Asthma
    - Bronchiolitis
    - Alpha-1-antitrypsin deficiency
    - Idiopathic Interstitial Pneumonias (IIP)
    - Sarcoidosis
    - Vasculitides (Wegener's, Churg-Straus, etc.)
    - Goodpasture's syndrome
    - Eosinophilic Granulomatosis/Lymphangioleiomyomatosis (LAM)
    - Eosinophilic Lung Disease
    - Pulmonary Alveolar Proteinosis
- Lung Neoplasms
    - Lung Cancer
    - Solitary Pulmonary Nodule
- Pulmonary Vascular Disease
    - DVT / Pulmonary Embolism
    - Pulmonary hypertension
    - Other pulmonary vascular disease, e.g. hepatopulmonary syndrome
- Pleural Disorders
    - Pleural Effusion

    - Pneumothorax

- Sleep Disorders
    - Obstructive sleep apnea
    - Central Sleep Apnea
    - Other Sleep Disorders
- Pulmonary Infections
    - Community-acquired pneumonia
    - Aspiration pneumonia
    - Lung abscess
    - Mycobacterial Disease
    - Pulmonary Infections in HIV
    - Pulmonary Infection in non-HIV immunocompromised host
    - Endemic mycoses
    - Actinomycosis/Nocardiosis
- Occupational and Environmental Diseases
    - Hypersensitivity Pneumonitis
    - Occupational Asthma
    - Asbestosis
    - Silicosis
    - Berylliosis
    - Coal Workers' Pneumonitis
    - High-Altitude Disease
- Respiratory Muscle Disorders

In addition, residents should be able to explain the indications, risk and benefits, and/or interpret the results of the following procedures: (MK2)

- Thoracentesis
- Thoracostomy and pleurodesis
- Tracheostomy
- Bronchoscopy
- Arterial blood gas (ABG)
- X-ray of the chest
- CT scan of the chest
- Pulmonary function test (PFT)
- 6-minute walk test (6MWT)
- Polysomnogram
- Lung transplantation
- Lung volume reduction surgery (LVRS)

E. TEACHING METHODS

Clinical education is primarily delivered through direct patient care and attending rounds with the supervising attending physician and fellow. Bedside teaching will be employed to role model counseling skills, demonstrate physician exam techniques, and teach and perform procedures. Didactic learning is integrated into daily attending

rounds, case discussions with fellows and attendings, and a core lecture series covering subspecialty topics in Pulmonology. Residents are also recommended to attend the ICU fellow lecture.

Housestaff are required to attend the daily Noon Conference series and Morning Report when permitted by patient care duties.

Housestaff are expected to supplement their learning with additional reading on diseases encountered.

F. SUPERVISION AND EVALUATION

All housestaff and patient care will be supervised by the attending physician and fellow.

Residents will be evaluated by the supervising attending and fellow. Direct verbal feedback may be provided throughout the rotation, and written evaluation will be submitted electronically in MedHub at the end of the rotation. These can be reviewed by the resident at any time and will be reviewed with the housestaff during the Clinical Competency Committee meeting.

Direct observation and feedback of interviewing, examination, and/or counseling skills may be documented with the Mini-CEX.

G. EDUCATIONAL RESOURCES

Electronic resources are also available through the internet at Olive View-UCLA Medical Center and through UCLA.

- UpToDate
- Dynamed (coming)
- Harrison's Principles of Internal Medicine
- PubMed
- Visual Diagnosis (VisualDx)