

COURSE GOALS AND OBJECTIVES:

Educational Purpose and Goals

The purpose of the pulmonary medicine rotation is to expose the fourth year medical students in a meaningful way to a variety of common lung diseases those are frequently seen in inpatient and outpatient pulmonary settings, as well as to know more about an expanded group of pulmonary pathologies that are frequently seen by pulmonary specialists.

Specific Objectives:

- Develop effective consultation skills, those may include assessment of patient and formulating a management plan on pulmonary view point and also learn the appropriate use of pulmonary consultation service.
- Learn to recognize and treat the major clinical syndromes and diseases encountered in pulmonary medicine (Detailed in Medical Knowledge Section).
- Understand the pathophysiology of common pulmonary diseases.
- Learn the appropriate indications of invasive and non-invasive ventilator support and contraindications of Non invasive ventilation
- Understand the use (Initiation, titration and discontinuation) of non-invasive ventilation
- Learn the appropriate use of different common mechanical ventilation settings, interpretation of data and process of weaning.
- Understand the interpretation of pulmonary function testing, chest x-rays, and CT examinations of the thorax.
- Know the appropriate indications and complications for bronchoscopy and other invasive pulmonary procedures.
- Observe bronchoscopy, Endobronchial ultrasound, electro-navigational bronchoscopy and interventional pulmonary procedures
- Understand basic tenets of obesity related respiratory disorders; sleep disordered breathing and other common sleep related disorders.
- Learn the use of CPAP and BiPAP in sleep related disorders.

Principle Teaching Methods

A. Supervised Direct Patient Care Rounds: Students will be involved in initial consultations and subsequent care of patients that have been admitted to Orlando Health Hospitals or are being seen OHPG pulmonary clinics. All students are supervised by the residents and fellows under the direction of fulltime faculty pulmonary specialists.

B. Teaching Rounds: After the student has examined the patient, formulated an assessment and treatment plan, and presented the case to the resident or the pulmonary fellow, the teaching round takes place. The attending teaching consultant will conduct the teaching round.

C. Pulmonary Lectures:

The students will be expected to attend all or most of the following pulmonary educational activities -

1. Monthly Pulmonary case conference
2. Monthly CCM Pulmonary fellows Joint Case conference
3. Joint Pulmonary- CCM-ID conference
4. Monthly Journal club
5. Monthly Critical Care Journal Club

6. Monthly chest Pathology conference
7. Bi-Monthly chest Radiology conference
8. Pulmonary Fellows grand round
9. Core didactic – Grand Round series
10. Ambulatory care conference – 30 minute /week
11. Thoracic oncology multidisciplinary tumor board – 1 hour/week- Presenter – Multiple faculty

In addition to the core curriculum conferences, the following teaching sessions are available:

1. Special one to one rotation lectures on specific pulmonary pathology seen during rounds will be presented by the faculty two to three times per week,
2. Similar teaching session on tracheostomy and vent management, sleep disorders and interventional pulmonary procedures will be delivered during this rotation

D. Supervised Procedures: Students may assist and in some cases perform procedures like Thoracentesis, ventilator management, tracheostomy management and observe bronchoscopic procedures.

Educational Materials

- a. At the beginning of the specific rotation, students will receive an electronic folder containing pre-test questions, reading material including text book chapters, review articles and pivotal articles relevant to that specific rotation or specific concentration of pulmonary medicine. All students are expected to read independently and finish reading the material provided in the electronic folder
- b. Computerized educational resources will be available to all the students in dedicated workstations at designated work areas, on call rooms, hospitals and ambulatory clinic sites and other designated locations across different training sites. The online resources available now are -
 1. Uptodate
 2. Cinical Key
 3. MDConsult
- c. Full online and print subscription of select journals including New England Journal of Medicine, The Lancet, Chest, AJRCCM, JAMA, Thorax, European respiratory Journal, Critical Care Medicine will be made available to the students
- d. Procedure Video Library of New England Journal of Medicine will be made available for the students
- e. Through the onsite ORMC library, students will have access to any full text journal article on request

Specific Competency Objectives

Patient Care: History Taking

- Demonstrates the ability to obtain and document a comprehensive history from patient and/or surrogate. Learn to focus specifically on issues important to pulmonary diseases.
- Achieves these objectives with moderate faculty input.
 - Respiratory symptoms
 - Exercise tolerance
 - Tobacco history
 - Occupational History
 - Pets and allergy history
 - Previous diagnostic testing, specifically old imaging studies and old PFT
 - Sleep symptoms
 - Genetic, epidemiologic, and disease-related risk factors for lung disease.

Students will be evaluated for history taking skill in college specific evaluation forms by Mini-CEX tests.

Patient Care: Physical Exam

- Demonstrate the ability to perform accurate and complete physical examination with particular emphasis on detailed pulmonary exam.
- With close faculty input, should be able to describe and document abnormalities in physical examination, specifically common signs encountered with pulmonary diseases including
 - Different types of abnormal(Bronchial etc.) and normal breath sounds
 - Wheezing, Rhonchi
 - Crackles – Dry, wet, velcro crackles.
 - Egophony/ Bronchophony/ Whispering pectoriloquy
 - Pleural friction rub

Students will be evaluated for history taking skill in in college specific evaluation forms by Mini-CEX tests.

Patient care: Medical Decision making

- Learn to develop rapport with primary physicians, other consultants, nurses, Respiratory therapists, and radiology and pathology department staffs.
- Learn recognizes clinical de-compensation and appropriately seeks assistance.
- Can formulate management plan including diagnostic work up and therapeutic interventions in common pulmonary problems. (See medical knowledge list).
- Document consults and progress notes which are precise, to the point to identify important data and demonstrate thoughtful problem-based assessment and plan.

These objectives are expected to be met with regular faculty input.
 These objectives are met with detail faculty input.

Methods of Evaluation: Student Competency Evaluation Form, Chart Review/documentation

Patient Care: Procedural skills

- Understand the indications and complications for all procedures performed:
 - PFTs

- Thoracentesis
- NIPPV setup and management
- Mechanical Ventilation setup, management and weaning
- Tracheostomy Management

Procedures performed with close faculty supervision.

Methods of Evaluation: Student Competency Evaluation Form, Procedure Log

Patient Care: Consultation Process

- Plan goals of consultation
- Clarify questions by primary referring team
- Differential diagnosis based on history, exam and prior studies
- Recommend further studies and therapy, with summary of indications and risks
- Discuss with supervising attending in each step

Methods of Evaluation: Student Competency Evaluation Form

Medical Knowledge

- Applies relevant clinical and basic science knowledge in the following common pulmonary conditions:
 - Differential Diagnosis, etiology of Common respiratory symptoms like dyspnea, cough, hemoptysis
 - Obstructive Airway Disease: COPD and Asthma
 - Restrictive Lung Diseases
 - Interstitial Lung Diseases
 - Interstitial Pneumonias and other diffuse lung diseases
 - Sarcoidosis
 - Occupational Lung Diseases
 - Pulmonary Vascular Disease
 - Pulmonary hypertension
 - Pulmonary Vasculitis, GPA, MPA, EGPA
 - Pulmonary Renal Syndromes
 - Pneumonia
 - Infections in the immunocompromised host
 - Community Acquired Pneumonia
 - Health Care Acquired Pneumonia
 - Sleep-disordered breathing
 - Obesity Related Disorders
 - Pleural diseases, pleural effusion, asbestosis
 - Mycobacterial Infections
 - Pulmonary Embolism and Deep Venous Thrombosis
 - Allergy, URIs and hypersensitivity pneumonitis
 - Thoracic malignancy, Lung Cancer
 - Bronchiectasis and Cystic fibrosis
 - Drug Induced Lung Disease

- Introduction to mechanical ventilation
- Tracheostomy Management
- Respiratory failure and supplemental oxygen
- Lung transplantation

Methods of Evaluation: Student Competency Evaluation Form

Interpersonal and Communication Skills

- Effectively establishes rapport with patients and families.
- Communicates well with primary referring team and other consultants.
- Presents on rounds in an organized and articulate fashion.
- Functions as an effective consult team member.
- Provides timely and thorough electronic documentation of patient care.

Methods of Evaluation: Student Competency Evaluation Form, Mini-CEX

Professionalism

- Strives for patient care and knowledge excellence.
- Reliably accomplishes assigned tasks
- Demonstrates integrity, respect for others, honesty and compassion.
- Demonstrates timely completion of administrative tasks and documentation.

Methods of Evaluation: Student Competency Evaluation Form, Conference Attendance

Practice Based Learning and Improvement

- Seeks and accepts feedback from team about patient care, organization and presentations. Learns basic EBM principles, and article review.
- Understands limits of own knowledge, and seeks help.
- Understands EBM principles, and begins to utilize relevant research to support decision-making and teaching of junior team members.
- Identifies knowledge deficiencies and seeks to correct them.

Methods of Evaluation: Student Competency Evaluation Form

Housekeeping Rules:

Expectations about Rounds

Rounds with the attending physician should begin at a specified time and place convenient to the attending physician. The length of round will depend on patient census. The emphasis here should be on the bedside teaching with discussion of clinical findings and approach to the patient. Ideally, the student should round with the resident and the fellow in advance of the attending. The attending physician is expected to spend at least 50% of the time on rounds in bedside teaching.

Student Responsibility

The student will be responsible for daily follow up the patients assigned to her or him. The scope of these daily visits will include taking initial and daily follow up history, doing daily physical examination, planning the work-up, formulating a diagnostic and therapeutic plan and writing daily student notes. The students should familiarize themselves with every pulmonary service patient in the hospital and round daily with the team. The students are expected to demonstrate academic interest, initiative and thoroughness in pursuing the medical literature and clinical questions relating to his/her patients.

The student is also expected to attend outpatient pulmonary clinic with the rounding attending.