

## **Pulmonary Curriculum**

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## **Pulmonary Curriculum**

### **Competency Goals and Objectives and Faculty Evaluation Methods of Inpatient Clinical, Procedural and Consultation Training**

#### **Orlando Regional Medical Center**

#### **Pulmonary Medicine Fellowship**

##### Description of the service-

The inpatient clinical experience is slated to be rich, diverse and very hands-on.

- A. There will be total of 8 months core clinical rotation of inpatient pulmonary consult service.
- B. Pulmonary consult service will deal with inpatient pulmonary consults at ORMC and Winnie Palmer Hospital
- C. Average census of the service will be 15-20 patients. Fellow himself will see 1/3<sup>rd</sup> of the patient's himself, while the residents and the attending faculty will see the others.
- D. The fellow will be the first responder and will receive all consult calls except for specific cases where hospital policy mandates attending to attending calls
- E. The rounding attending, the fellow and the internal medicine resident rotating in pulmonary service will discuss each patient with the resident and the fellow.
- F. Under direct supervision, the fellow will schedule, perform and follow up on bronchoscopy and other procedures
- G. The fellow will interpret, under direct supervision of consult service attending, all the PFTs done at ORMC and OHHI pulmonary office building. The total number of PFTs per week is around 40
- H. A typical day for the fellow should begin at 7.30 AM and except extraordinary circumstances, is not expected to last beyond 6 PM
- I. The fellow would get at least 4 days off during a four week month and 5 days off during a five week month.
- J. During off hours, the fellow will be backed by the on call attending.
- K. Anticipated overnight pages are not expected to be more than 2 pages/night except for extraordinary circumstances
- L. Inpatient consult service will give the fellows the experience of acute and emergency management of pulmonary diseases as well as chronic care of chronically ill patients on long term mechanical ventilation or with tracheostomy at the ICC or rehab units.

##### Educational Purpose and Goals

The purpose of the pulmonary consult service rotation is to expose the PGY IV and PGY V pulmonary fellows in a structured way to the extensive spectrum of pulmonary diseases, common and rare, those a pulmonologist will be expected to manage in inpatient pulmonary settings. The

fellows will also master the skills in all pulmonary procedures and learn about an expanded group of pulmonary pathologies they may come across during their future career as pulmonary specialist.

Specific Objectives:

- Assess the consultation skills of the fellow and help the fellow transition their consultation skills from an internist's level to a specialist's level. The fellow will master the skills of patient assessment and formulating a management plan on pulmonary view point.
- Learn to recognize and treat the major clinical syndromes and diseases encountered in pulmonary medicine (Detailed in Medical Knowledge Section).
- Understand the pathophysiology of an extensive array of pulmonary diseases.
- Demonstrate the knowledge of pre-operative pulmonary risk assessment and perioperative pulmonary management of surgical patients
- Understand pulmonary focused physiology of pregnant patients and learn the pulmonary problems that may be encountered during pregnancy and demonstrate the knowledge to manage those
- Learn the appropriate indications of invasive and non-invasive ventilator support and contraindications of Noninvasive ventilation
- Understand the use ( Initiation, titration and discontinuation) of non-invasive ventilation
- Demonstrate the skills of appropriate use of different common and advanced mechanical ventilation settings, interpretation of ventilator data and waveform analysis.
- Know non-conventional management tools of respiratory failure like Prone positioning, inhaled NO etc
- Demonstrate the knowledge to independently initiate ventilator weaning process, safely liberate patients from ventilation and pursue weaning efforts in chronic mechanical ventilator dependent patients
- Learn the indication and use of home NIPPV and AVAPS
- Learn to interpret pulmonary function testing, chest x-rays, and Computed Tomography studies of the thorax. Also learn to recognize the common findings and life threatening conditions in imaging studies of other major organ systems.
- Learn the appropriate indications, contraindications and complications of diagnostic and therapeutic bronchoscopy including Bronchoalveolar Lavage( diagnostic and serial Aliquot), Bronchial Washing, Cytology and protected specimen brushing, Endo-bronchial and trans-bronchial biopsy, EBUS and navigational bronchoscopy procedures
- Learn other invasive pulmonary procedures including endotracheal intubation, difficult airway management with the use of LMA, bougie etc, thoracentesis, tube tracheostomy, Tracheostomy exchange, insertion and management of pleurX catheter drainage system
- Understand basic tenets of obesity related respiratory disorders; sleep disordered breathing and other common sleep related disorders.
- Demonstrate the ability to interpret common sleep disorders in polysomnography,
- Learn the use of noninvasive positive pressure ventilation such as CPAP, BiPAP in sleep related disorders.

## Fellow year specific Competency Objectives

### Patient Care: History Taking

- PGY-IV
- Learn to obtain and document a comprehensive history on a pulmonary specialist's perspective, from patient and/or surrogate. Demonstrate time management skills pulmonary history taking.
- Achieves these objectives with minimal faculty input.
  - Respiratory and cardiac 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.
- PGY-V - Comprehensive history with abovementioned emphasis obtained without guiding input from faculty
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation

### Patient Care: Physical Exam

- PGY-IV
- Demonstrate the ability to perform accurate and complete physical examination with particular emphasis on detailed pulmonary exam.
- With minimal faculty input, the fellow should be able to describe and document abnormalities in physical examination, signs of life threatening pathologies and other signs encountered with pulmonary diseases spectrum. The signs include
  - Different types of abnormal( Bronchial etc.) and normal breath sounds
  - Hyper-resonant and dull percussion notes, Wheezing, Rhonchi, silent chest
  - Crackles – Dry, wet, velcro crackles.
  - Egophony/ Bronchophony/ Whispering pectoriloquy
  - Pleural and pericardial friction rubs
  - Tachypnea, tachycardia, signs of impending respiratory failure
  - Understands the rationale of clinical examination of the chest, value of examination in diagnosis of pneumonia and CHF.

- Understand the pathologic principles behind developments of the signs
- Design and modify the management plan according to the signs
- PGY-V
  - Achieves the above objectives independent of faculty input.
  - Teach the resident recognize and understand the signs
  - Knows the EBM-supporting data on pulmonary specific physical examination.
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation

Patient care: Medical Decision making

- PGY- IV
  - Develops good collaborative work flow with primary physicians, other consultants, nurses, Respiratory therapists, and radiology and pathology department staffs.
  - Reliably recognizes critical illness, clinical de-compensation and appropriately step up care.
  - Demonstrate the skills in review of charts, radiological and laboratory studies
  - Formulate management plan including diagnostic work up and therapeutic interventions in an extensive array of pulmonary problems. (See medical knowledge list).
  - Document consults and progress notes which are precise but complete of all required points, to the point to identify important data and demonstrate thoughtful problem-based assessment and plan.

These objectives are expected to be met with occasional faculty input.

- PGY-V
  - Take leadership role in the collaborative work flow with primary physicians, other consultants, nurses, Respiratory therapists, and radiology and pathology department staffs.
  - Accurately interprets examination and study findings.
  - Independently initiate management strategies.
  - Can independently initiate emergent interventions and modify ongoing management strategies.
  - Can identify failure to respond to appropriate therapy and analyze the causes of the failure.
  - Consistently uses and advocate EBM-based approach to diagnostic evaluation and management.

These objectives are to be met independent of faculty input.

- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation
  - Chart Review/documentation

Patient Care: Procedural skills

- PGY-IV
  - Masters cognitive, counseling, and technical skills for all procedures performed:
    - PFTs
    - Thoracentesis
    - NIPPV setup and management
    - Mechanical Ventilation setup, management and weaning
    - Tracheostomy Management
    - Diagnostic Bronchoscopy including BAL, Brushing, Lavage and Trans bronchial biopsy
  - Understand the indications, contraindications and potential complications.

Procedures performed with hands on faculty supervision.

- PGY-V
  - Above Procedures performed with clear understanding of potential complications and occasional faculty supervision as needed.
  - Teaches the above procedures to junior fellows and residents.
  - Masters cognitive, counseling, and technical skills for diagnostic procedures like EBUS, Navigational Bronchoscopy
  - Get adequate exposure to interventional pulmonary procedures, their indications, contraindications and complications
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation
  - Procedure specific evaluation form
  - Procedure log

Patient Care: Consultation Process

- PGY-IV
  - 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
- Develops strategy for managing patient referrals and follow-up.
- Discuss with supervising attending in each step
- PGY- V
  - Serves as an effective consultant.
  - Consultation provided with EBM literature
  - Keep attending in the loop about major developments and management changes.
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation

### Medical Knowledge

Pulmonary fellows must demonstrate knowledge of established evolving biomedical, clinical, epidemiological and social-behavioral sciences, in pulmonary medicine, as well as the application of this knowledge to their patients. The fellows are expected to acquire this knowledge through 1) direct patient care activities with supervisions and teaching from Pulmonary Medicine faculty, 2) active participation in all fellowship and divisional conferences including Radiology Conference, Pathology Conference, Case conference, Core Lecture Series, Journal club, and Grand Rounds. Fellows are expected to self-direct learning and learn independently through preparation for presentations they give throughout their fellowship. Specific competencies in this area will be detailed in the individual rotations. PGY-Specific Learning Goals and Objectives:

### PGY-IV

- Applies relevant clinical and basic science knowledge, demonstrates a progression in knowledge and analytical thinking with well formulated differential diagnoses and management plans in conditions related to pulmonary medicine.
- Have the understanding of historical aspects, evolution of medical literature and the knowledge up to date evidence in managing the pulmonary conditions mentioned below-
  - Differential Diagnosis, etiology of Common respiratory symptoms like dyspnea, cough, hemoptysis
  - Obstructive Airway Disease: Different phenotypes, Pathology, Pathogenesis and Epidemiology of COPD
  - Obstructive Airway Disease: Management of COPD and exacerbation.
  - Asthma of varying severity, Occupational asthma, Asthma COPD overlap Syndrome, Combined Pulmonary Fibrosis emphysema syndrome – Phenotypes and pathogenesis
  - Management of Asthma – Outpatient and inpatient scenario
  - Pulmonary Embolism and Deep Venous Thrombosis
  - Respiratory failure and supplemental oxygen

- Noninvasive modes of ventilation - inpatient and home
- Mechanical ventilation: Basic
- Mechanical Ventilation: Advanced
- Pneumonia: Infections in the immunocompromised host
- Community Acquired Pneumonia
- Health Care Acquired Pneumonia
- Restrictive Lung Diseases: Concept, approach and differential of Interstitial Lung Diseases
- Diffuse Parenchymal Lung Disease: Interstitial Pneumonias and other diffuse lung diseases
- Pleural diseases, pleural effusion, asbestosis
- Sleep-disordered breathing
- Diffuse Parenchymal Lung Disease: Sarcoidosis
- Tracheostomy Management
- Chest Radiology: Basic Concepts
- Diffuse Parenchymal Lung Disease: Hypersensitivity pneumonitis and Eosinophilic pneumonia
- Diffuse Parenchymal Lung Disease: Rare lung disorders like LAM, LCH
- Occupational Lung Diseases – Pneumoconiosis, Silicosis
- Pulmonary Vascular Disease: Pulmonary hypertension
- Pulmonary Vascular Disease: Overview of Vasculitis, Wagner’s Granulomatosis, Microscopic Polyangiitis, Pulmonary Renal Syndrome
- Pulmonary problems associated with immunocompromised state
- Obesity Related Respiratory Disorders
- Sleep Disorders: Narcolepsy, Cataplexy, PLMS, RLS
- Sleep Disorders: Insomnia, Parasomnia
- Mycobacterial Infections : Tuberculosis
- Mycobacterial Infections: Non Tuberculous infections
- Allergy, URIs, rational of allergy tests and immunotherapy
- Thoracic malignancy, Lung Cancer
- Bronchiectasis: Non-Cystic fibrosis
- Cystic Fibrosis
- Drug Induced Lung Disease
- Tracheostomy Management
- Lung transplantation
- Neuromuscular Respiratory Disorders
- Chest radiology: Case based discussion
- Altitude and Deep Sea Physiology

#### PGY-V

- Be proficient with the most relevant and current medical literature and the most current guidelines in management of common pulmonary conditions.



- Lead discussions and education of other fellows, house staff, nursing, allied health staff and medical students.
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Fellows Core Competency skills Milestone Evaluation
  - In-services Examination

#### Interpersonal and Communication Skills

Fellows work at ORMC, a tertiary care hospital in Orlando that will provide a broad range of patients from different cultural and socioeconomic backgrounds. Specific competencies in this area will be detailed in the individual rotation curricula.

- Pulmonary Fellows must demonstrate interpersonal and communication skills that result in effective exchange of information and collaboration with patients, their families, and health professionals.
- Fellows are expected to work effectively in a variety of healthcare delivery systems in both pulmonary and critical care environments and collaborate with others as part of a multi-disciplinary team.
- The fellows will learn to communicate effectively with patients and families from a diverse range of socioeconomic and cultural backgrounds.
- Finally, the fellows are expected to be effective teachers for other members of the health care team.

#### PGY Specific Competencies: PGY-IV

The fellow is expected to (in addition to the above):

- 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.
- Clearly and effectively present patients on rounds and communicate effectively with the attending and other health care professionals.
- Clearly and effectively communicate with patients in both pulmonary and critical care settings and communicate the diagnostic and therapeutic plan of care.
- Provides timely and thorough electronic documentation of patient care.
- Effectively carries out difficult discussions, such as sensitive topic discussions with moderate faculty input.
- Provides teaching and feedback to more junior team members on their communication styles.
- Functions as an effective team leader.

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#### PGY-V

- Able to deal with the most challenging patients and families with minimal direction.
- Coordinates team communication to optimize patient care.
- Functions as an effective team leader with decreasing reliance on attending.
- Functions as an extension of consultant.
- Carry increasing responsibility in independently communicating with patients, families, and other health care providers.
- Collaborate effectively with a multi-disciplinary team during Consult and Critical Care rotations
- Communicate effectively with non-physician health care professionals on rotations such as Physiology/Sleep Medicine, and Bronchoscopy.

Fellows achieve these competencies by integrating into multi-disciplinary teams in the critical care setting and in the care of patients who are chronically critically ill.

- Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through
  - 360 evaluations - Multisource
  - Patient evaluations (Outpatients as well as inpatients)
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Program Director's Annual Summative Evaluation

#### Professionalism

Pulmonary fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to practice medicine with compassion, integrity, and respect for others with sensitivity to a diverse population of patients including but not limited to diversity in gender, age, culture, race, religion, disability, and sexual orientation. Fellows must demonstrate responsiveness to the needs of patients and society that supersedes self-interest; they must demonstrate accountability to patients, society, and the profession, with a commitment to excellence and ongoing development.

#### PGY-IV

- Strives for patient care and knowledge excellence.
- Provide sensitive and unbiased care to patients on the pulmonary and critical care services
- Reliably accomplishes assigned tasks
- Demonstrates integrity, respect for others, honesty and compassion.
- Demonstrates timely completion of administrative tasks and documentation.
- Be sensitive and receptive to those whom they supervise. c. Be professional and courteous with anyone who is calling upon them for assistance with a pulmonary or critical care patient

- Sets a tone of respect and collegiality for the team.

#### PGY-V

- The fellow is expected to (in addition to the above) a role model for junior fellows, house staff officers, and students.
- Show a commitment to excellence and ongoing professional development.

These skills are developed through direct role modeling and supervision by PCCM faculty over the duration of the fellowship.

Fellows are directly evaluated by supervising faculty as well as by multi-disciplinary groups consisting of physicians and nurses regarding professionalism. In addition, a 360 evaluation as well as a patient evaluation of the fellow are performed annually. These evaluations are regularly reviewed with fellows to ensure that they constantly self-assess their professionalism.

- Methods of Evaluation:
  - 360 evaluations - Multisource
  - Patient evaluations (Outpatients as well as inpatients)
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Program Director's Annual Summative Evaluation

#### Practice Based Learning and Improvement

Pulmonary 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. Fellows are expected to develop skills and habits to identify strengths and deficiencies in their PCCM knowledge and expertise and to set learning and improvement goals to improve upon these weaknesses. Fellows are expected to identify and perform appropriate learning activities, systematically analyze practices and quality improvement methods and implement changes with the goal of practice improvement. Fellows must learn to locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems and use information technology to acquire this information. Finally, fellows must facilitate the learning of patients, families and other health-care workers.

#### PGY-IV

- Understands EBM principles, and begins to utilize relevant research to support decision-making and teaching of junior team members. Utilize current medical literature and guidelines in learning about the evaluation and management of pulmonary disease processes.
- Identify strengths and deficiencies in their knowledge of pulmonary medicine based on their feedback received on their performance during inpatient consultation months, presentations, and participation in conferences and seeks to correct them.

- Facilitate the education of patients, families, students, faculty and other health care professionals.
- Make ongoing improvement in their evaluation and management plans on patients with pulmonary conditions.

#### PGY V (In addition to above)

- Become proficient at appraising and assimilating knowledge from pertinent medical literature and educating others through fellow led conferences and journal clubs.
- Identify quality issues involving pulmonary diseases and systematically analyze practice using evidence-based medicine to initiate a quality project or research project.
- Lead education of patients, families, students, faculty and other health care professionals
- Carry out a quality project or research project that was initiated during Year 2 and implement change that will improve patient care or practice.

These skills are developed through multiple learning experiences. Fellows learn directly from faculty in inpatient and outpatient settings through rounds, didactics and from the direct faculty supervision of their performance. They learn to practice evidence-based medicine through requirements of case presentations, journal clubs, and core curriculum conferences.

- Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through
  - 360 evaluations - Multisource
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Program Director's Annual Summative Evaluation
  - Direct feedback for supervising attending
  - Evaluations of presentations

#### Systems Based Practice:

- Pulmonary fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare as well as the ability to call effectively on other resources in the system to provide optimal healthcare for their patients.
- Fellows are expected to work effectively in various health care delivery settings relevant to the practice of pulmonary medicine.
- Fellows are expected to work as members of inter-professional and multi-disciplinary teams to enhance the safety and quality of care of their patients.
- Fellows are expected to coordinate care of their patients within the various healthcare systems that they work in.
- The fellows are expected to identify system errors.

#### PGY Specific Competencies:

PGY IV: The fellow is expected to:

- Learn how to work within different health care systems including a tertiary care hospital (Orlando Regional Medical Center) and ambulatory clinics (Pulmonary clinic, Lung Nodule clinic, Sleep clinic etc).
- Partner with other members of a health care team to enhance the safety and quality of care of their patients.
- Learn to coordinate care for their patients either in the inpatient or outpatient setting.
- Learn about the costs of specific medications utilized both in the Inpatient and in the outpatient setting.
- Become proficient in the coordination of care of their inpatients and outpatients.
- Increase their knowledge about healthcare utilization and cost-effective practice both in the Inpatient and in the outpatient setting.
- Participate in identifying system errors, dissecting these issues and implementing change.

PGY V: The fellow is expected to (in addition to the above):

- Lead multi-disciplinary teams on rounds in the Pulmonary consult service and in MICU.
- Routinely consider cost awareness and risk-benefit analysis in providing patient care both in pulmonary and critical care.
- Get familiarize with the concepts and potential impact of accountable care organization, healthcare reform, changes pertaining to 3<sup>rd</sup> party payer systems and CMS

The fellows rotate in different health care systems including a tertiary care center at Orlando Regional Medical Center and ambulatory clinics at Outpatient settings of OHHI and APH. Within the hospital, they rotate through different systems including units staffed by house staff and units staffed primarily by nurse practitioners. They participate in multi-disciplinary rounds in the critical care setting as well as the chronic ventilator unit. They are active participants in identifying quality issues and helping to provide solutions that can be adopted by all faculty and fellows (e.g. Quality Initiative Projects). In addition, they receive didactics on this topic throughout the fellowship.

- Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Quality project report and presentation evaluation. They receive both formal electronic feedback as well as direct feedback from supervising attending that they then incorporate into their daily practice. Specific competencies in this area will be detailed in the individual rotation curricula
  - Program Director's Annual Summative Evaluation

**Pulmonary Curriculum**  
**Competency Goals and Objectives and Faculty Evaluation Methods of**  
**- Outpatient / Ambulatory Care Services**  
**Orlando Regional Medical Center**  
**Pulmonary Medicine Fellowship**

Introduction-

Outpatient management of patients with both acute and chronic lung disease as well as outpatient follow up of acute lung diseases is becoming an increasingly important component of fellowship training.

This is also important in light of accumulating evidence that risk factor modification, such as exposure avoidance and smoking cessation, and disease prevention, which are only possible in an outpatient setting, have the potential to change the natural history of a number of acute and chronic lung diseases.

Orlando Health Pulmonary Fellowship Program will ensure that the fellows get a well-rounded training experience that provides with reasonable proportions of inpatients and outpatient experience and a good mix of acute, chronic, common and rare pulmonary problems. The ambulatory component of the fellowship program is designed to not only train future pulmonary physicians, but also great academicians and researchers dealing with the clinical, social, epidemiologic, preventive aspects pulmonary spectrum of human disease cycle. The significant amount of time fellows will spend practicing in the office setting and treating chronic diseases will give them a perspective they would otherwise not have gotten if practicing inpatient only.

Ambulatory education is a vital aspect of every GME program, and the fellowship program will continually explore innovative ways to improve the fellows' outpatient experience.

The ambulatory curriculum will insure that each fellow, upon graduation, becomes proficient in caring for pulmonary conditions in office setting and becomes a thought leader in managing outpatient pulmonary issues in interdisciplinary encounters and advocates for the patients with respiratory handicap.

Ambulatory care component of Orlando Health Pulmonary Fellowship Program will also provide the fellows with invaluable training and experience in niche pulmonary subspecialty fields like Cystic Fibrosis, Pulmonary Hypertension, Lung Transplantation, Lung Nodules, IPF.

Another vital role of the ambulatory care training of the Pulmonary Fellows will be giving fellows the needed exposure to subspecialties very closely allied to the field of Pulmonary medicine e.g. Thoracic Oncology and Thoracic surgery.

In the Orange Country Pulmonary/ TB clinic the fellows will get the needed exposure to indigenous population as well as outpatient management of Tuberculosis including MDR TB.

#### Structure of Ambulatory Care Service-

##### 1. Continuity Clinic –

- a. All fellows will participate in an ongoing continuity clinic which will provide them with the opportunity to develop an understanding of and appreciation for the longitudinal nature of general pulmonary pathology.
- b. The Orlando Health Pulmonary Fellows will assume responsibility for the continuing care of a group of patients throughout his/her training. Inherent in this principle of continuity of care is that patients are seen on a regular and continuing basis, rather than on a single occasion.
- c. The experience will occur weekly for one half-day session, and will occur on the same day for the two years of training. Moreover, the faculty preceptors and Fellows' colleagues will remain stable for the clinic from year to year.
- d. The Continuity experience will occur at a single site – the Pulmonary Clinic at the Orlando Health Heart Institute, which is adjacent and geographically connected to the Primary Site, ORMC.
- e. The Continuity Clinic experience will have priority over virtually all other resident responsibilities in the Program. Fellows' participation in the activities (educational and clinical) of the Continuity Clinic is considered mandatory in the Program.
- f. All Fellows will participate in a pre-clinic conference before each continuity clinic. The conference topics will follow the Ambulatory Pulmonary Medicine Curriculum developed by the program, which includes case-based interactive sessions with required evidence-based reading material covering the broad scope of outpatient care in pulmonary medicine. The curriculum is available in both paper and electronic format.
- g. The fellow will have the opportunity to care for patients with acute respiratory illness, lung mass, infection, pleural effusion as well as chronic problems like COPD, Asthma, IPF, tracheostomy care, pleurX care etc

- h. Patients initially managed in the in the emergency department, hospital inpatient service, intensive care unit and other inpatient sites may be enrolled in the fellows' panels.
  - i. The fellow will serve as the coordinator of comprehensive primary respiratory care for patients with complex and multiple respiratory/ pulmonary health-related problems.
  - j. The fellow should show evidence of increasing ability to involve social and other support services in the patient's care and to advocate for the patient as barriers to care are encountered.
  - k. They will be assigned 60 minute for a new patient and 30 minute for established patients. The consult service pulmonary attending will supervise the fellows' continuity clinic.
2. Subspecialty Clinic:
- a. During their elective months, fellows will be doing two half days of clinic, one will be the fellows continuity clinic while the other will be a sub-specialty clinic. Fellows can choose between Sleep clinic, Interventional pulmonary clinic, Pulmonary Hypertension clinic, cystic fibrosis clinic, IPF clinic, thoracic oncology clinic, Infectious disease TB clinic and Lung Nodules clinic.
3. Ambulatory Care month - During each year, fellows will have a rotation in Ambulatory service for one month. During ambulatory service, fellows will get 100% outpatient experience. In addition to their own continuity clinic- fellows will rotate in six half day shifts of Orange County Pulmonary/TB clinic, sleep clinic, Lung nodules clinic, Thoracic oncology clinic, Pulmonary HTN clinic, IPF clinic and Cystic Fibrosis clinic.

Goals: The primary goal of this rotation is for fellows to develop the necessary skills to effectively evaluate and manage general and complex pulmonary disorders in an outpatient setting. All fellows will participate in an ongoing continuity clinic which will provide them with the opportunity to develop an understanding of and appreciation for the longitudinal nature of general pulmonary pathology.

1. Development of therapeutic longitudinal relationships with patients
2. Development the skill and knowledge concerning the ambulatory care of adults
3. Developing proficiency in handling acute, urgent and chronic problems in the care of ambulatory patients
4. Developing an appreciation of cost-effective, evidence-based care as well as exposure to principles of total quality management and managed care.
5. Understanding the natural history and medial management of acute, niche and chronic pulmonary diseases
6. Acquiring the ability to effectively modify or avoid risk factors or exposures. This includes but is not limited to smoking cessation, asthma hygiene, and environmental concerns.



7. Understand the disease spectrum, healthcare needs and affordability issues of the indigenous population and people living below poverty level
8. Learn to use evidence-based medicine to guide decision making;
9. Learn to counsel patients and families and provide compassionate and comprehensive care;
10. Know how to coordinate patient care and communicate effectively with referring physicians, other health professionals, and health related agencies.
11. Learn both the initial and long-term approaches to providing care for the disorders noted above.

Educational Objectives:

- Learn to assume continuing care of a group of patients throughout his/her training
- Gain the opportunity to care for patients with acute respiratory illness, lung mass, infection, pleural effusion in the outpatient setting as well as manage chronic problems like COPD, Asthma, IPF, tracheostomy care, pleurX care etc
- Obtain insights in long term evolution of the pulmonary conditions seen in the hospital
- Learn how to serve as the coordinator of comprehensive primary respiratory care for patients with complex and multiple respiratory/ pulmonary health-related problems.
- Show evidence of increasing ability to involve social and other support services in the patient's care and to advocate for the patient as barriers to care are encountered.
- Gain experience in managing the spectrum of health and illness for older outpatients.
- Learn appropriate Documentation, Billing and Health Care maintenance (routine/ screening) tools appropriate for outpatient care
- Know the best practices of Patient/caregiver education
- Gain experience in discussing and setting goals of care
- Master skills in communication with referring physicians, and Co-managing physicians
- Understand the best practice methods in co-management with primary care physicians and/or other specialists.
- Understand the basic principles of management of chronic diseases like Cystic Fibrosis, IPF during subspecialty clinic rotations
- Understand the concepts of sleep disorders and learn to manage patients with common sleep disorders
- Gain experience in staging and treatment decision making process of thoracic malignancies
- Gain experience in serial surveillance of pulmonary nodule in nodule clinic
- Understand the diagnostic and therapeutic strategies in patient with Pulmonary Hypertension
- Learn to determine which patients require admission
- Learn how to manage the chronically ill and fragile patient who once would have been cared for as an inpatient.
- Identify appropriate patient candidates for pulmonary rehabilitation.
- Learn the indications for & complications/benefits of long-term supplemental oxygen therapy, and develop an understanding of the stationary and portable systems by which supplemental oxygen can be delivered.
- Appropriately identify lung transplant candidates and refer in a timely matter.
- Identify potential candidates for clinical trial enrollment (IPF, COPD, Asthma, Lung Cancer).

## ACGME Six Core Competency Based fellowship year specific objectives -

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.

Objectives: Fellows are expected to:

- Learn how to effectively and completely obtain historical information regarding the presentation of patients with pulmonary disease. Takes a thorough yet focused pulmonary history that addresses various risk and environmental factors, includes a functional assessment, and always documents a smoking, occupational, environmental history and, if appropriate, counsels on cessation.
- Learn to perform and document thorough and complete but directed physical examinations on unique pulmonary patients and appreciates subtle findings.
- Learn the use of appropriate diagnostic testing with sound rationale and include that in management plan.
- Learn to write follow-up notes that would include address test results with appropriate interpretations and document changes in management based on results
- Know how to communicate effectively with patients and families regarding plans for evaluation, management, and prognosis of different pulmonary conditions
- Gain the experience to coordinate complex outpatient care and communicate effectively with referring physicians and other consultants involved in patient care.

PGY Specific Objectives (in addition to the above)

Year 1 (PGY4): The fellow is expected to (including the above):

- Take a detailed pulmonary history, including recognition of pertinent occupational and environmental exposures that impact lung health.
- Understand and implement the appropriate diagnostic evaluation for patients with pulmonary complaints, such as dyspnea, cough, and sputum production.
- Understand and implement the appropriate diagnostic and therapeutic plans for patient with sleep disorders.
- Learn to counsel patients effectively regarding risks and benefits of different diagnostic and therapeutic options.
- Learn to counsel patients regarding the benefits and options for smoking cessation.
- Improve in evaluation and management skills of complex pulmonary conditions.
- Improve in evaluation, diagnosis and therapeutic planning for patients with sleep disorders.
- Counsel patients effectively regarding complex therapeutic options including risks and benefits of immunosuppressive medications for interstitial lung diseases and sarcoidosis.
- Communicate effectively with referring providers and coordinate health care as part of a team
- Obtain the skills to deduct Management plans at a consultant level which are based on up-to-date scientific evidence; personal preferences gathered from the patient,

well considered data obtained from appropriately ordered diagnostic tests, and would reflect sound clinical judgment

- Learn to timely evaluate for home based therapy and equipment such as home oxygen and NIPPV
- Gather the skills of outpatient procedures including pleurX catheter management, tracheostomy management and exchange, diagnostic and therapeutic thoracentesis

Year 2 (PGY5): The fellow is expected to (including the above):

- Become proficient in the evaluation and management of both common and less common pulmonary diseases.
  - Become proficient in the management of complex and rare ILD and sleep disorders patients.
  - Partner effectively with referring providers and coordinate health care as part of a team.
- 
- Methods of Evaluation:
    - Fellow's Competency Evaluation Form (Attached)
    - Mini-CEX
    - Fellows Core Competency skills Milestone Evaluation
    - Direct Supervision
    - Multisource Evaluation

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.

Objectives: Fellows are expected to learn about the evaluation and management of the following diverse pulmonary conditions:

- Obstructive lung diseases including asthma, emphysema, chronic bronchitis, and bronchiectasis.
- Interstitial lung diseases including sarcoidosis, usual interstitial pneumonitis, hypersensitivity pneumonitis, and interstitial lung diseases associated with collagen vascular disease. The fellows are expected to know all of the organ manifestations, radiographic findings, laboratory findings as well as management and therapeutic options of sarcoidosis and ILD.
- Eosinophilic lung diseases including chronic eosinophilic pneumonia, acute eosinophilic pneumonia and Churg-Strauss Syndrome.
- Pulmonary infections including atypical mycobacterial diseases and fungal diseases in immunocompetent and immunocompromised hosts
- Occupational and environmental lung diseases.
- Chronic respiratory failure secondary to obstructive lung disease and restrictive ventilatory defects.
- Drug-induced lung diseases.
- Pulmonary neoplasms.

- Pleural diseases.
- Pulmonary vascular diseases including pulmonary embolism and all forms of pulmonary arterial hypertension.
- Pre-operative assessment of patients scheduled to undergo surgery, such as lung resection and bariatric surgery.
- Sleep-disordered breathing.
- Respiratory manifestations of neuromuscular diseases.

PGY Specific Objectives (including the above)

Year 1 (PGY4): The fellow is expected to:

- Know the presentation, natural history, and general principles of management for common pulmonary diseases as listed above.
- Understand the pathophysiology underlying the development of common lung diseases: particularly COPD, asthma, idiopathic pulmonary fibrosis.
- Understand the role and interpretation of pulmonary function testing and cardio-pulmonary exercise testing in the diagnosis and follow-up of patients with various lung diseases.
- Understand the indications, interpretation and limitations of diagnostic radiology procedures (i.e. chest x-ray, chest CT scan, ventilation-perfusion scans, PET scans) in evaluation and management of lung diseases.
- Understand the indications, contraindications, and need for monitoring of common pulmonary medications, such as beta-agonist and anti-cholinergic inhalers, steroid inhalers, and systemic steroids.
- Understand the pathophysiology and immunology of sarcoidosis.
- Understand the indications, contraindications, limitations, complications and techniques of procedures required commonly by patients with respiratory diseases, including bronchoscopy and thoracentesis, to enable fellows to educate patients about these techniques and to obtain informed consent.
- Understand the indications, contraindications, and need for monitoring of common pulmonary medications, such as beta-agonist and anti-cholinergic inhalers, steroid inhalers, systemic steroids and immunosuppressive regimens.
- Understand the pathophysiology underlying the development of common lung diseases – particularly COPD, asthma, idiopathic pulmonary fibrosis, sleep disordered breathing and respiratory manifestations of neuromuscular disease.

Year 2 (PGY5): (in addition to the above):

- Understand the indications, contraindications, limitations, and complications of surgical lung biopsy to enable fellows to educate patients about the risk benefit ratio of procedure and impact on management of disease.
- Know the salient features of rare and orphan lung diseases
- Gain a basic knowledge of the pharmacology of chemotherapeutic and other immunosuppressive agents
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Fellows Core Competency skills Milestone Evaluation
  - In-services Examination

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.

Objectives: Fellows are expected to:

- Recognize the need for and coordinate care across multiple disciplines including respiratory therapy, diagnostic and interventional radiology, thoracic surgery, pathology, and other medical services such as cardiology, neurology, rheumatology, oncology, and surgical specialties.
- Recognize financial considerations and other socio-behavioral factors that may impact a patient's ability to undergo diagnostic evaluation or adhere to a prescribed course of therapy. Fellows should be able to elicit these concerns from patients, and consider alternative management strategies.
- Evaluate and manage patients in consideration of potential risks and benefits individualized to each patient.
- Understand the concepts of 3rd party payer system, and learn to navigate through payer pre-authorization, restrictions of diagnostic tests, therapeutic options
- Get familiarized with DME management and Knows how to order and arrange for oxygen, BiPAP and CPAP etc.
- Know all the resources available in the clinic, in the community and other local government, state and federal facilities and utilizes them efficiently and effectively.
- Learn to Practices cost-effective care

PGY Specific Objectives: Year 1 (PGY4): The fellows are expected to

- Coordinate care and recognize financial considerations and then seek guidance from the clinic preceptor in decision making and management for the patient.
- Become proficient in the coordination of care for their patients and expected to be able to make sound decision making in light of a patients individualized financial or personal preferences.

Year 2 (PGY5):

- Become adept at individualizing patient management to combine sound clinical judgment along with patient preference.

Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through

- Fellow Competency Evaluation Form
- Milestone Evaluation
- Quality project report and presentation evaluation. They receive both formal electronic feedback as well as direct feedback from supervising attending that they then incorporate into their daily practice. Specific competencies in this area will be detailed in the individual rotation curricula
- Program Director's Annual Summative Evaluation

Interpersonal and Communication Skills:

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Fellow must communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds

Objectives: Fellows are expected to:

- Learn take a compassionate, sensitive and accurate history in patients of different backgrounds
- Gain experience to explain management objectives and their reasoning to patients and their families
- Learn to communicate plans for evaluation, results of studies and management plans to referring providers

PGY Specific Objectives: Year 1 (PGY4):

- Develop communication skills in both verbal and in the written clinic documentation.
- Become proficient in communicating plans of evaluation and management to the patient, families, ancillary providers and referring physicians
- Learn to Counsel patients on proper vaccine appropriately and documents this
- Gain skill in smoking cessation counselling

PGY Specific Objectives: Year 2 (PGY5):

- Become proficient in communicating difficult plans of management including risk/benefit analysis and tailoring patient care to patient preference.

Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through

- 360 evaluations - Multisource
- Patient evaluations
- Fellow Competency Evaluation Form
- Milestone Evaluation
- Program Director's Annual Summative Evaluation

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.

Objectives: Fellows are expected to develop skills and habits to be able to:

- Identify strengths, deficiencies, and limits in one's knowledge and expertise.
- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.

PGY Specific Objectives: Year 1 (PGY4): The fellows are expected to:

- Learn to receive feedback from clinic preceptors regarding presentations, evaluation and management of patients and incorporate that feedback in improving their patient care.

- Understand current guidelines and literature for the care of the most common general pulmonary conditions such as asthma, COPD, pulmonary nodules and implement appropriate care according to the literature.
- Understand the current guidelines and literature for the management of sarcoidosis.
- Incorporate evidence from scientific studies into decision making regarding screening, evaluation, counseling and management of all aspects of patient care.

Year 2 (PGY5): The fellows are expected to (in addition to the above):

- Gain the skill to routinely incorporate evidence from scientific studies into decision making regarding screening, evaluation, counseling and management of all aspects of patient care.
- Achieve the ability to educate other members of the healthcare team about pulmonary disorders with an expert understanding of the literature.

Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through

- 360 evaluations - Multisource
- Fellow Competency Evaluation Form
- Milestone Evaluation
- Program Director's Annual Summative Evaluation
- Direct feedback for supervising attending
- Evaluations of presentations

#### Professionalism

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

Objectives: Fellows are expected to:

- Learn to demonstrate compassion, integrity and respect to patients
- Show responsiveness to a patient's needs and follow up accordingly
- Commit to carrying out professional responsibilities and adhere to ethical principles.
- PGY 4( F1) Specific Objectives:
  - Provide sensitive and unbiased care to the patients in the outpatient clinic.
  - Demonstrate professional and courteous behavior
  - Build the professional habit to be punctual, prompt and be well prepared in advance for all patients, presentations, and conferences.
  - Learn to recognize the importance of patient preferences when selecting a diagnostic and therapeutic option.
  - Learn to establish trust with patients and staff
  - Understand and be very particular in following up on test results, patient telephone calls, and solving problems arising outside of clinic hours
  - Understand the importance of timeliness in medical record entries and completing relevant orders and forms
  - Train to respects patients' autonomy and rights and become a vigorous patient advocate.
- PGY5 (F2) Specific Objectives: Fellows are expected to (in addition to the above):

- Learn the ethical principles pertaining to the provision or withholding of care, patient confidentiality and informed consent.
  - Be proficient in making management decisions ethically and
  - Train to be a role model of professional behavior for those whom the fellows will supervise
- 
- Methods of Evaluation:
    - 360 evaluations - Multisource
    - Patient evaluations
    - Fellow Competency Evaluation Form
    - Milestone Evaluation
    - Program Director's Annual Summative Evaluation



**Pulmonary Curriculum –**  
**Competency Goals and Objectives and Faculty Evaluation Methods of**  
**Critical Care Services**  
**Orlando Regional Medical Center**  
**Pulmonary Medicine Fellowship**

Patient Care: History Taking

PGY 4 (F1) Specific Objectives-

- Demonstrates the ability to obtain and document an accurate and complete history from patient and/or care taker with specific focus on:
  - Symptoms of respiratory diseases
  - Symptoms of critical illness including early sepsis, impending respiratory failure, and developing renal injury
  - Identification of risk factors for development of critical illness, e.g.
    - Previous ICU admissions
  - Pre-ICU management including hemodynamic support, fluid management, and respiratory care
  - Common exposures to occupational/environmental agents including tobacco
  - Use, abuse of recreational drugs
  - Suicidal and accidental overdose
  - Historical clues to bioterrorism or communicable infections affecting mass population
  - Necessary information from pulmonary function studies and past charts
  - Review of current treatments pertinent to the pulmonary /Critical care medicine problems, such as medications, ventilator strategy, respiratory care
  - Intra-operative and Post-operative management including hemodynamic support, fluid management, and respiratory care
- Achieve these objectives with moderate to occasional faculty input

PGY 5 (F2) Specific Objectives-

Achieve the above objectives independent of faculty input

- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision and chart review
  - Multisource Evaluation

Patient Care: Physical Exam

- PGY 4 ( F1) With minimal faculty input, the fellow should be able to describe and document abnormalities in physical examination, signs of life threatening pathologies and other signs encountered with pulmonary diseases spectrum. The signs include
  - Different types of abnormal( Bronchial etc.) and normal breath sounds
  - Hyper-resonant and dull percussion notes, Wheezing, Rhonchi, silent chest
  - Crackles – Dry, wet, velcro crackles.
  - Egophony/ Bronchophony/ Whispering pectoriloquy
  - Pleural and pericardial friction rubs
  - Tachypnea, tachycardia, signs of impending respiratory failure
  - Symptoms and Signs of different types of Shock
  - Different toxidromes
  - Understands the rationale of clinical examination of the chest, value of examination in diagnosis of pneumonia and CHF.
  - Understand the pathologic principles behind developments of the signs
  - Design and modify the management plan according to the signs
- PGY-V
  - Achieves the above objectives independent of faculty input.
  - Teach the resident recognize and understand the signs
  - Knows the EBM-supporting data on pulmonary specific physical examination.
- Methods of Evaluation:
  - Fellow’s Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation

Patient Care: Ventilator Management:

PGY 4 (F1): With occasional to modest faculty input, can:

- Describe the different modes of ventilation
- Identify appropriate modes for different patient scenarios
- Interpret wave forms
- Choose appropriate initial ventilator settings for different patient scenarios
- Interact effectively with respiratory therapy in managing the ventilator
- Predict, identify, manage, understand and describe complications of mechanical ventilation
- Effectively documents ventilator changes
- Comfortable in using pressure cycled, volume cycled, spontaneous and open lung modes of mechanical ventilators
- Learn Ventilator weaning strategies and can efficiently select patients for weaning and safely liberate patients from Ventilators
- Understand the basics of supplemental oxygen use in ICU, know different tools and masks.
- Comfortable in using Noninvasive positive pressure ventilation in appropriate patients and know the signs of NIPPV failure

PGY 5 (F2)

- Can perform the above without faculty input.
- Can trouble shoot ventilator problems
- Comfortable in setting up advanced modes of ventilation including open lung ventilation, Prone Ventilation etc.
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation

Patient Care: Test Interpretation:

PGY4 (F1) - With moderate faculty input Masters the cognitive and technical skills for interpretation of:

- Chest roentgenogram
- Computed axial tomograms of Chest, Abdomen and Head
- Interpretation of PA catheter data and Cardiac output determination by thermodilution
- Interpretation of dynamic hemodynamic measures
- Interpretation of antibiotic levels and sensitivities
- Monitoring and assessment of metabolism and nutrition
- Interpretation of antibiotic levels and sensitivities
- EKG, Echocardiogram and Cardiac MRI
- Radionuclide scans
- Pulmonary angiograms
- Biomarkers of tissue hypo perfusion, infection and serological studies of CTD and CNS pathology
- Calculation of oxygen content, oxygen delivery, intrapulmonary shunt, and alveolar arterial gradients

PGY5(F2) - Masters the cognitive and technical skills for interpretation of above mentioned tests with minimal faculty input

- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Mini-CEX
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Multisource Evaluation

Patient Care: Procedural Skills

PGY 4 (F1) – With occasional to moderate Faculty Input –

- Masters the rationale, knowledge base as well as cognitive, counseling, and technical skills for:
- Establishment of airway

- Maintenance of airway in nonintubated patients with compromised wakefulness or muscular strength .
- Oral and nasotracheal intubation
- Tracheostomy tube management, changes, weaning and decannulation
- Management of mechanical ventilation
- Ventilation by bag or mask
- Management of pneumothorax (needle insertion and drainage systems)
- Maintenance of circulation
- Arterial puncture and blood sampling
- Insertion of central venous, arterial and pulmonary artery balloon flotation catheters
- Basic and advanced cardiopulmonary resuscitation
- Cardioversion
- Diagnostic and therapeutic procedures including thoracentesis, flexible fiberoptic bronchoscopy and related procedures, and chest tubes.
- Calibration and operation of hemodynamic recording systems

PGY 5 (F2) – Can perform the procedures with occasional no Faculty Input.

- Methods of Evaluation:
  - Fellow’s procedure Competency Evaluation Form (Attached)
  - Fellows Core Competency skills Milestone Evaluation
  - Direct Supervision
  - Procedure Log

Medical Knowledge:

PGY 4 (F1) – With Moderate to Occasional Faculty input -

- Achieve the knowledge base as well as the cognitive and counseling skills in the following domains:
- Physiology, pathophysiology, molecular biology, diagnosis, and therapeutic options of common critical care disorders of the cardiovascular, respiratory, renal, gastrointestinal, genitourinary, neurologic, endocrine, hematologic, musculoskeletal and immune systems as well as of infectious disease.
- Electrolyte and acid base physiology, pathophysiology, diagnosis and therapy.
- Metabolic, nutritional, and endocrine affects of critical illnesses.
- Hematologic and coagulation disorders secondary to critical illness.
- Critical obstetric and gynecologic disorders.
- Management of the immunosuppressed patient.
- Management of anaphylaxis and acute allergic reactions.
- Trauma
- Indication, limitation and complications for:
  - Parenteral nutrition
  - Monitoring/bioengineering including utilization, calibration of transducers
  - Pericardiocentesis
  - Transvenous pacemaker insertion
  - Peritoneal dialysis

- Peritoneal lavage
- Intracranial pressure monitoring
- Pharmacokinetics, pharmacodynamics, drug metabolism and excretion in critical illness.
- Use of paralytic agents
- Indications, safety measures and complications of transportation of critically ill patients
- Ethical, economic and legal aspects of critical illnesses.
- Psychosocial and emotional affects of critical illnesses.
- Iatrogenic and nosocomial problems in critical care medicine.
- Personal development, attitudes and coping skills of physicians and other health care professionals who care for critically ill patients
- Methods of Evaluation:
  - Fellow's Competency Evaluation Form (Attached)
  - Fellows Core Competency skills Milestone Evaluation
  - In-services Examination

Interpersonal Skills and Communication  
PGY 4 (F1) –

Effectively establishes rapport with patients and families and initiates communication with them on a regular basis.

Presents on rounds in an organized and articulate fashion

Appropriately communicates with other health care professionals.

Establishes a congenial professional rapport with nursing staff, Respiratory therapists and other ancillary personnel

Effectively carries out difficult discussions, such as end of life care decisions with moderate faculty input

Provides teaching and feedback to more junior team members on their communication styles.

Functions as an effective team leader

PGY 5 (F2) –

Able to deal with the most challenging patients and families

Coordinates team communication to optimize patient care

Functions as an effective team leader

Able to facilitate resolution to conflicts with team members

- Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through
  - 360 evaluations - Multisource
  - Patient evaluations (Outpatients as well as inpatients)
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Program Director's Annual Summative Evaluation

Professionalism:

PGY 4 (F1) With moderate faculty input

- Identifies Ethical Issues
  - Strives for patient care and knowledge excellence
  - Reliably accomplishes assigned tasks
  - Demonstrates integrity
- Reliably identifies and accomplishes necessary tasks
- Provides junior team members counseling on professionalism issues
- Sets a tone of respect and collegiality within the team
- Demonstrates integrity

PGY 5(F2) – Achieve the above professional standards with minimal or no faculty input

- Methods of Evaluation:
  - 360 evaluations - Multisource
  - Patient evaluations (Outpatients as well as inpatients)
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Program Director's Annual Summative Evaluation

Practice Based Learning and Improvement:

PGY 4 (F1) – With moderate to occasional Faculty input

- Learn to use textbooks, review articles, monographs and guidelines to build a strong foundation of medical knowledge in critical care medicine.
- Know how to Supplement textbook learning with primary literature.
- Understand and can critically appraises primary literature and uses principles of evidence-based medicine to formulate care plans

PGY 5 (F2) – Achieve the above objectives with minimal or no faculty guidance

- Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through
  - 360 evaluations - Multisource
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Program Director's Annual Summative Evaluation
  - Direct feedback for supervising attending
  - Evaluations of presentations

Systems Based Practice:

PGY 4 (F1)): The fellows are expected to

- Recognize the need for and coordinate care across multiple disciplines including nursing, critical care pharmacy, respiratory therapy, critical care dietician, diagnostic and interventional radiology service, other medical and surgical subspecialty consultants, pathology and laboratory services.
- Recognize financial considerations, family resources and dynamics as well as other socio-behavioral factors in long term therapeutic interventions and goal of care. Fellows should be able to elicit these concerns from patients, and consider alternative management strategies.
- Know all the resources and services, including consultation services available in the healthcare system, and utilizes them efficiently and effectively.
- Learn to Practices cost-effective care
- Become proficient in the coordination of care for their patients and expected to be able to make sound decision making in light of a patients individualized personal preferences.
- Initiate ICU quality improvement project

PGY5 (F2): With minimal or no faculty input

- Become adept at individualizing patient management to combine sound clinical judgment along with patient preference.
- Complete ICU quality improvement project and present the data with recommendations of changes

- Methods of Evaluation: They will be evaluated on their ability to communicate with their colleagues as well as their patients through
  - Fellow Competency Evaluation Form
  - Milestone Evaluation
  - Quality project report and presentation evaluation. They receive both formal electronic feedback as well as direct feedback from supervising attending that they then incorporate into their daily practice. Specific competencies in this area will be detailed in the individual rotation curricula
  - Program Director's Annual Summative Evaluation

**Pulmonary Curriculum -**  
**Competency Goals and Objectives and Faculty Evaluation Methods of**  
**Others Services and Electives**  
**Orlando Regional Medical Center**  
**Pulmonary Medicine Fellowship**

Learning Goals and specific objectives, a rotation description as well as Fellowship Year Specific Competency evaluation methods is available with the fellowship program Director and the fellows will be apprised of the goals and objectives by the program director at the beginning of each of the rotations. The rotations include the following –

1. Pediatric Pulmonology
2. Thoracic Oncology
3. Thoracic Surgery
4. Research
5. Respiratory Therapy/ PFT