

**PULMONARY AND CRITICAL CARE MEDICINE  
FELLOWSHIP CURRICULUM  
INPATIENT PULMONARY CONSULTATIONS**

**Description of Rotation or Educational Experience**

**Name:** Inpatient Pulmonary Consultation Service

**Duration:** 1 month

**Location:**

**Call:** Daytime weekly and weekend coverage

**Goals:** Fellows rotate on the Inpatient Pulmonary Consultation Service as part of their Pulmonary Medicine experience required by the Pulmonary and Critical Care Residency Review Committee. Fellows assigned to this clinical service are responsible for providing comprehensive primary care of pulmonary inpatients. This includes understanding the diagnosis of acute and chronic lung diseases, to master the procedural skills and understand the indications, complications, and limitations of procedures associated with pulmonary medicine, and to master the interpretation of pulmonary function and exercise testing. Fellows assigned to this clinical service are responsible for the teaching and supervision of residents and medical students assigned to the service.

**Patient Care**

**Goals**

Fellows will assume progressive responsibility for the evaluation and management of acutely and chronically ill pulmonary inpatients in order to learn the natural history of pulmonary disease as well as the effectiveness of therapeutic programs. Fellows are expected to:

**Competencies**

- Gather appropriate clinical information
- Synthesis information into a care plan
- Partner with patients/families in the implementation of the plan

**Objectives**

All fellows are expected to:

- Develop skills in history/physical examination of the critically ill patient
- Integrate clinical data in the formation of a comprehensive care plan,
- Provide compassionate, appropriate, and comprehensive patient care through:
  - a. Responding to requests for inpatient or emergency room consultation, evaluation and/or management in a timely and appropriate fashion,
  - b. Providing appropriate follow-up management to established patients on the service,

- c. Coordinating Pulmonary Diagnostic Procedures (Fiberoptic Bronchoscopy, Thoracentesis, Chest Tube Thoracostomy, Closed Pleural Biopsy, Progressive Cardiopulmonary Exercise Testing).
- d. Gaining competency in the performance of procedures necessary for the practice of clinical pulmonary medicine.

**Educational Content**

All faculty are expected to:

- Deliver educational content via clinical bedside teaching, informal didactics on rounds, formal didactics on rounds, and formal didactics via conferences (i.e. core curriculum, case conferences, journal club, etc).
- Supervise the fellows clinical experience with regards to family interactions and procedures
- Provide simulation training with anatomic models

**Fellowship Year-Specific Objectives:**

**FY-1:** First-year fellows are expected to demonstrate the ability to obtain and document an accurate and complete history from patient and/or care taker, and coordinate the clinical efforts of the assigned housestaff team. First-year fellows are expected to perform (with attending supervision and assistance) all fiberoptic bronchoscopies thoracenteses, pleural biopsies, chest tube placements, and other procedures that may arise on the service.

**FY-2 & 3:** Senior (2<sup>nd</sup> and 3<sup>rd</sup>-year) fellows are expected to demonstrate the ability to obtain and document an accurate and complete history from patient and/or care taker, coordinate the clinical efforts of the assigned housestaff team, and be able to independently lead daily rounds. Senior fellows are expected to anticipate and pro-actively address potential problems with regards to patient care. Senior fellows are expected to perform (with attending supervision and assistance) all fiberoptic bronchoscopies, thoracenteses, pleural biopsies, chest tube placements, and other procedures that may arise on the service.

**Medical Knowledge**

**Goals**

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 are expected to demonstrate skills in:

**Competencies**

- Acquisition of knowledge
- Analysis of information
- Application of knowledge

**Objectives**

All fellows are expected to:

- Attend the didactic lectures during the rotation, unless interrupted by emergent

<p>patient care</p> <ul style="list-style-type: none"> <li>• Demonstrate their knowledge base through direct communication with the teaching Attending physician, RT/RN staff, and medical housestaff</li> <li>• Effectively demonstrate their knowledge through documentation the patients' medical records</li> <li>• Use textbooks and primary literature to build a strong foundation of medical knowledge.</li> <li>• Be exposed to and develop an understanding of the following content areas:       <ol style="list-style-type: none"> <li>1. <b><u>Obstructive lung diseases</u></b>, including asthma, bronchitis, emphysema, bronchiectasis, and cystic fibrosis</li> <li>2. <b><u>Pulmonary malignancy</u></b>, including primary lung cancers and metastatic tumors</li> <li>3. <b><u>Pulmonary infections</u></b>, including tuberculous, fungal, and those in the immunocompromised host</li> <li>4. <b><u>Diffuse interstitial lung disease</u></b></li> <li>5. <b><u>Pulmonary vascular disease</u></b>, including primary and secondary pulmonary hypertension and the vasculitis and pulmonary hemorrhage syndromes</li> <li>6. <b><u>Occupational and environmental lung diseases</u></b></li> <li>7. <b><u>Iatrogenic respiratory diseases</u></b>, including drug-induced disease</li> <li>8. <b><u>Acute lung injury</u></b>, including radiation, inhalation, and trauma,</li> <li>9. <b><u>Pulmonary manifestations of systemic diseases</u></b>, including collagen vascular diseases that are primary in other organs</li> <li>10. <b><u>Respiratory failure</u></b>, including the adult respiratory distress syndrome, acute and chronic respiratory failure in obstructive lung diseases, and neuromuscular respiratory drive disorders,</li> <li>11. <b><u>Disorders of the pleura and the mediastinum</u></b></li> <li>12. <b><u>Genetic and developmental disorders</u></b> of the respiratory system,</li> <li>13. <b><u>Sleep disorders</u></b>, including the recognition and differential diagnosis of common sleep symptoms, the effect of sleep on pulmonary diseases and treatments, the utility and interpretation of cardiopulmonary monitoring, critical review of polysomnographic reports, and management of sleep-disordered breathing</li> <li>14. <b><u>Use of reservoir masks and continuous positive airway pressure masks</u></b> for delivery of supplemental oxygen, humidifiers, nebulizers, and incentive spirometry</li> <li>15. <b><u>Management of diseases of the pleural space</u></b> including pneumothorax and pleural effusions (needle insertion and thoracostomy tube insertion and drainage systems)</li> <li>16. <b><u>Pulmonary function tests</u></b> to assess respiratory mechanics, gas exchange, and respiratory drive, including spirometry, flow volume studies, lung volumes, diffusing capacity, arterial blood gas analysis, Inhalation challenge studies, and exercise studies</li> <li>17. <b><u>Diagnostic and therapeutic procedures</u></b>, including thoracentesis, pleural biopsy, flexible fiber-optic bronchoscopy, and related procedures</li> <li>18. <b><u>Ventilatory support</u></b>, weaning, and respiratory care techniques</li> <li>19. <b><u>Examination and interpretation of sputum, bronchopulmonary secretions, pleural fluid/tissue, and</u></b></li> </ol> </li> </ul>	
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**lung tissue for infectious agents; cytology; and histopathology**

20. Knowledge of and ability to interpret the following **radiologic procedures:**
  - a. chest roentgenograms
  - b. computed axial tomograms
  - c. radionuclide scans
  - d. pulmonary angiograms
  - e. other radiologic procedures.
21. **Occupational Safety and Health Administration (OSHA)**  
regulations and universal precautions and protection of health-care workers
22. **Ethical, economic, and legal aspects of pulmonary illness**
23. **Pre-operative pulmonary evaluation**

**Educational Content**

All faculty are expected to:

- Deliver educational content via clinical bedside teaching, informal didactics on rounds, formal didactics on rounds, and formal didactics via conferences (i.e. core curriculum, case conferences, journal club, etc)
- Supervised clinical experience is part of the educational content of medical knowledge
- Provide simulation training with anatomic models

**Fellowship Year-Specific Objectives:**

**FY-1:** First-year fellows are expected work in conjunction with the attending physician in leading daily rounds and providing bedside teaching. They should gain familiarity with the diagnostic and therapeutic approaches to patients on the inpatient pulmonary service and implement national practice guidelines. They should also develop skills in radiographic interpretation. First-year fellows are also encouraged to supervise and teach (with attending supervision and assistance) procedures to the junior housestaff and/or medical students assigned to the service.

**FY-2 & 3:** Senior (2<sup>nd</sup> and 3<sup>rd</sup>-year) fellows are expected to be able to independently lead daily rounds and provide bedside teaching. They should formulate comprehensive diagnostic and therapeutic approaches to inpatients with respiratory disorders. Senior fellows must demonstrate the ability to reliably generate an extensive differential diagnosis, and generate a patient care plan. Senior fellows are also expected to supervise and teach (with attending supervision and assistance) procedures to the junior housestaff.

**Practice-Based Learning and Improvement**

**Goals**

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:

**Competencies**

- Access available information to assist in the management of pulmonary inpatients
- Use information technology to optimize learning
- Identify strengths, deficiencies and limits in one’s knowledge and expertise
- Review adverse outcomes in a critical fashion in order to improve future practice patterns
- Demonstrate effectiveness as a teacher

**Objectives**

All Fellows are expected to:

- Use direct communication with the teaching Attending physician, RT and RN staff to expand their knowledge base,
- Demonstrate diligence and proficiency in the use of available written resources (printed, intranet, internet) to assist in the management their patients
- Critically appraise primary literature and use principle of evidence-based medicine to formulate care plans.
- Demonstrate self reflection on their practice and determine areas for improvement, and
- Participate in the didactic lecture series, including providing 2-3 lectures during each month on service.

**Educational Content**

All faculty are expected to:

- Deliver educational content via formal didactics, participation in quality assurance and quality issue conferences, case conference presentations (requiring internet and library-based literature searches and a review of their practice experience).

**Fellowship Year-Specific Objectives:**

**FY-1:** First-year fellows are expected to pursue independent reading on each patient encounter. They should self-reflect on performance and develop learning plans with assistance from supervising faculty. First-year fellows should incorporate formative feedback into daily practice and seek feedback from faculty members on performance.

**FY-2 & 3:** Senior (2<sup>nd</sup> and 3<sup>rd</sup>-year) fellows are expected to be able to implement results of in-training exams to guide self-directed learning. Senior fellows should perform efficient literature searches and select manuscripts based on EBM principles, including effective search techniques, awareness of study design, influence of chance, bias, and confounders. Senior fellows should demonstrate effective self-directed learning to faculty members. Senior fellows may elect to conduct a CQI or research project in the field of pulmonary inpatient medicine.

**Systems Based Practice**

**Goals**

Residents 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 are expected to have a meaningful understanding of the following issues:

**Competencies**

- Health care delivery system
- Cost effective practice
- Patient safety and advocacy/Systems causes of error

**Objectives**

All Fellows are expected to:

- Work as an effective member of the Pulmonary Inpatient Consultative Medicine team in all interdisciplinary activities (rounds, primary care, consultations, and procedures) within his/her assigned patient care responsibilities,
- Learn about the natural history of pulmonary illness as patients recover and transition through the medical center, including clinical pathological correlations when appropriate, and
- Demonstrate awareness of the ethical, economic, and legal aspects of pulmonary illness.
- Organize and work effectively as a member of a multidisciplinary team, coordinating the consult service with the nursing services and other hospital ancillary services (PT, OT, RT, Nutrition Service, etc).
- Fellows are expected to supervise and teach (with attending supervision and assistance) pulmonary procedures to the junior housestaff.

**Educational Content**

All faculty are expected to:

- Deliver educational content via bedside teaching, faculty role modeling at the bedside and informal didactics.
- Supervised clinical experience is part of the educational content of systems-based practice
- Participate in QA/QI and administrative meetings

**Fellowship Year-Specific Objectives:**

**FY-1:** First-year fellows are expected to be able to coordinate care for chronic respiratory disease patients. They should participate in all quality improvement initiatives. First-year fellows should coordinate patient care activities with the primary team and facilitate pulmonary-specific testing such as PFT's and bronchoscopy.

**FY-2 & 3:** Senior fellows are expected to avail themselves of opportunities to be involved in the administration of the pulmonary consultative team, with particular reference to daily resource assessment and management, coordinating patient transfers, admissions, and discharges. They will demonstrate inpatient leadership and management principles, including quality improvement processes. Senior fellows should demonstrate and

incorporate thorough understanding of E&M documentation guidelines and billing processes.

## **Professionalism**

### **Goals**

Fellows must demonstrate professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Fellows are expected to understand and demonstrate:

### **Competencies**

- Professional behavior
- Ethical principles
- Cultural competence

### **Objectives**

All Fellows are expected to:

- Consistently demonstrate respect, altruism, integrity, honesty, compassion, and empathy for critically ill patients and their families
- Demonstrate ethical behavior in the hospital setting,
- Demonstrate cultural competence in the hospital setting, and
- Develop an awareness of the psychosocial and emotional effects of pulmonary illnesses.

### **Educational Content**

All faculty are expected to:

- Deliver educational content via bedside teaching, faculty role modeling at the bedside and informal didactics, and formal didactics.
- Supervised clinical experience is part of the educational content of professionalism.

### **Fellowship Year-Specific Objectives:**

**FY 1-3:** All fellows are to respond promptly and politely to pages, phone calls, and email. They should respect patient autonomy at all times and show respect for patients and other health care personnel. Fellows should uphold principles of truth and integrity and reliably put patients' interests ahead of own. All fellows must demonstrate adherence to ethical principles.

## **Interpersonal and Communication Skills**

### **Goals**

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Fellows are expected to:

### **Competencies**

- Communicate in an appropriate fashion with patients and families

- Communicate effectively, verbally, in writing, by telephone and/or through audio/video conferencing, with physicians and other health professionals.
- Demonstrate effective scholarly communication

**Objectives**

All Fellows are expected to:

- Communicate appropriately and professionally with patients and families
- Communicate (verbally and in writing) appropriately with physicians, nurses and other members of the health care team including completion of comprehensive, timely and legible medical records
- Demonstrate effective communication during presentations at lectures, seminars, or conferences

**Educational Content**

All faculty are expected to:

- Deliver educational content via bedside teaching, faculty role modeling at the bedside and informal didactics.
- Supervised clinical experience is part of the educational content of interpersonal skills.

**Fellowship Year-Specific Objectives:**

**FY-1:** First-year fellows are expected to respond promptly to consultation requests and obtain a clear reason for consultation. Fellows should promptly contact the requesting physician to discuss findings and recommendations that pertain to the patient care plan. First-year fellows should demonstrate an understanding of a patient’s perspective and share relevant information to patients, medical decision makers, and other key health care providers.

**FY-2 & 3:** Senior fellows are expected to anticipate controversial recommendations by the consult service and communicate these to the requesting physician. Senior fellows should reach agreement on problems and plans and provide closure when appropriate. They should function as an effective team leader and coordinate team communication to optimize patient care. Senior fellows may elect to demonstrate effective communication skills through writing scholarly abstracts or articles or by presenting posters at professional meetings

