

## **UW PULMONARY CONSULTATION SERVICE**

### **Location:**

University of Washington Medical Center  
Pulmonary Diagnostics Laboratory

### **FACULTY CONTACT:**

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## **OVERALL EDUCATIONAL PURPOSE**

To acquire knowledge of and have clinical experience with a broad range of pulmonary problems in an inpatient setting, including obstructive lung diseases, pulmonary infections, diffuse interstitial lung disease, pulmonary vascular disease, occupational and environmental lung disease, iatrogenic lung diseases, pulmonary manifestations of systemic diseases, acute and chronic respiratory failure, disorders of the pleura and mediastinum, and genetic disorders of the respiratory system.

To learn outpatient consultation and management of a wide range of pulmonary problems, including those listed above.

To learn inpatient management of care of the complications of lung transplant.

To acquire knowledge of and competence in with the use of reservoir masks, CPAP and other delivery methods for supplemental oxygen, weaning and respiratory care techniques, management of pneumothorax, including needle insertion and drainage systems and the examination and interpretation of sputum samples, BAL samples, pleural fluid and lung tissue.

To learn the indications, contraindications, complications and limitations as well as to develop proficiency in interpreting pulmonary functions tests, including spirometry, flow volume loops, lung volumes, diffusing capacity, and methacholine challenge studies.

To learn the indications, contraindications, complications and limitations as well as to develop proficiency in performing fiberoptic bronchoscopy, including lavage and biopsy.

To gain exposure and experience in monitoring and supervising a pulmonary function laboratory, respiratory care techniques and services, including respiratory physical therapy.

## **TEAM STRUCTURE**

Pulmonary Attending  
Pulmonary/CCM fellow  
Internal Medicine R3  
0-2 Fourth-year medical students

## **PRINCIPAL TEACHING METHODS**

### *Case discussion and review*

Inpatients on whom the Pulmonary Service has been asked to consult are seen initially by the student, senior resident, or fellow. Each patient is subsequently discussed with Pulmonary and Critical Care faculty member who also interviews and examines the patient on the same day the consult is requested. Follow-up rounds are made daily, or less frequently, depending on the specific problem encountered. Outpatients are seen in Pulmonary Clinic or Pulmonary Diagnostic Center by the student or fellow, and subsequently discussed with the Pulmonary and Critical Care Medicine faculty member that day.

Attending physicians who are board-certified in Pulmonary Disease, directly supervise one senior resident, one or two students, and one or two Pulmonary and Critical Care Medicine fellows. The fellow provides supervision of senior residents and students.

### *Rounds*

Rounds with all members of the team will occur at least once daily on all consultation follow-ups and lung transplant patients on the primary service.

### *Didactics*

Formal teaching conferences occur 3 times/week at which topics pertinent to Pulmonary Medicine are discussed. In addition, there are informal teaching conferences where pulmonary function tests, exercise tests, or problems pertinent to the patients being currently seen are discussed. The fellow is encouraged to attend the Department of Medicine

## **EDUCATIONAL CONTENT**

### **Mix of Diseases**

Patients are admitted to the direct care of the Pulmonary Service for non-ICU care following lung transplantation or its complications. Consultation services are provided to medical or surgical patients with a full range of mild to severe problems. Examples include asthma, chronic obstructive pulmonary disease, cough, pneumonia, tuberculosis and other infections, pre-operative evaluations, evaluations for dyspnea, infections in immunocompromised hosts, hemoptysis, drug-induced lung disease, pulmonary vascular disease, interstitial lung disease, lung cancer, cystic fibrosis and pulmonary manifestations of systemic diseases. In addition, consultation and management of mechanical ventilation, including the use of non-invasive ventilation, and weaning and respiratory care techniques will be provided by the service.

### **Patient Characteristics**

Patients admitted to the University of Washington Medical Center represent a full socioeconomic spectrum (Medicaid: 30%, Medicare: 21%) and men and women are equally represented. As a tertiary care center, the patients at the UWMC are likely to have complicated and unusual illnesses or end-stage organ disease. The ethnic mix reflects that of King County.

### **Types of Clinical Encounters**

All patients seen during the rotation are either inpatients or outpatients at UWMC. Clinical encounters include: emergency room evaluation at the time of admission or upon request, full history and physical examination at the time of consultation or clinic visit, and daily work rounds for inpatients. The fellow will provide primary coverage for lung transplantation patients and consultative services to all others.

## Procedures

Procedures most frequently performed by the fellow during this rotation include: fiberoptic bronchoscopy and related procedures, pulmonary function testing and interpretation, thoracentesis and pleural biopsy.

During this rotation the fellow will also acquire knowledge of and the ability to interpret imaging studies, including chest x-rays, thoracic CT scans, including CT angiograms, and radionuclide studies, particularly ventilation-perfusion scans.

## Services

The University of Washington Medical Center has a full range of services available for participation in patient care including a full mix of surgical, anesthesia and medical subspecialty consultation. The UWMC also has a full pulmonary diagnostic laboratory for pulmonary function testing and full radiologic imaging services.

## Rotation Specific Schedule

**(Note: Significant flexibility is built into this rotation schedule given the unpredictability of work load and patient acuity.)**

### Monday

8-9:30 Pre-rounding and new consultations  
9:30-10:30 Procedures (Resident report for R3)  
10:30-12:30 Attending rounds  
12:30-1:30 Lunch teaching conference (IM)  
2:00-3:00 Attending teaching rounds  
3:00-5:30 New consults, PFT interpretation, rounds

### Tuesday

8-9:30 Pre-rounding and new consultations  
9:30-10:30 Procedures  
10:30-12:00 Attending rounds  
12:00-1:00 Chairman's Rounds (IM)  
1:00-5:30 New consults, PFT interpretation, rounds

### Wednesday

8-9:30 Pre-rounding and new consultations  
9:30-10:30 Procedures  
10:30-12:30 Attending rounds  
12:30-1:30 Lunch teaching conference (IM)  
2:00-3:00 Attending teaching rounds  
3:00-5:30 New consults, PFT interpretation, rounds

### Thursday

8-9:30 Pre-rounding and new consultations  
9:30-10:30 Procedures  
10:30-12:00 Attending rounds  
12:30-2:30 Chest Conference and Respiratory/CCM Conference (HMC)  
3:00-5:30 New consults, PFT interpretation, rounds

**Friday**

|             |  |
|-------------|--|
| 8-9:30      | Pre-rounding and new consultations       |
| 9:30-10:30  | Procedures                               |
| 10:30-12:30 | Attending rounds                         |
| 12:30-1:30  | Lunch teaching conference (IM)           |
| 2:00-3:00   | Attending teaching rounds                |
| 3:00-5:30   | New consults, PFT interpretation, rounds |

**Call and Weekend Responsibilities**

There is no in-house call on this rotation. The fellow will take call from home at night, but lung transplant in-patients will be covered by the Medicine night float service. The fellow may need to return to the hospital for the rare admission of a lung transplant complication. The fellow will have every other weekend, from 5PM on Friday until 8AM on Monday free of all clinical responsibilities.

**Principle Educational Materials Used  
Recommended Readings**

The Pulmonary Consult Service has a small library maintained by the Pulmonary and Critical Care Medical Section that is located in the Pulmonary Diagnostic Center. In addition, a continuously amended notebook (syllabus) contains pertinent articles from the literature and is organized by subject. A computer providing direct access to literature searches is also located in the Pulmonary Diagnostic Center.

**Pathologic materials**

All pathologic materials (including BAL, sputum stains and cultures and pleural fluid samples) obtained in the evaluation of patients will be reviewed by the fellow and the interpretation will be confirmed with the attending. All lung biopsy samples will be directly reviewed by the fellow, attending and the consulting pulmonary pathologist.

**METHODS USED IN EVALUATING RESIDENT AND PROGRAM PERFORMANCE**

At the end of the rotation, the fellow is evaluated in writing and their performance reviewed with them verbally by every attending and fellow he or she has interacted with for a significant amount of time. The evaluator rates the fellow on a nine-point scale in each component of clinical competence (i.e. patient care, medical knowledge, practice based learning improvement, interpersonal and communication skills, professionalism, system based learning, educational attitudes, leadership, overall clinical competence).

The fellow is given the opportunity to evaluate in writing the quality of the curriculum and the extent to which the educational goals and objectives of the rotation have been met. The resident also evaluates the teaching competence of each attending and fellow with whom s/he has interacted for a significant amount of time. The fellows will meet with the program director and division head at the end of each rotation to discuss these issues directly.

**EXPLICIT LINES OF RESPONSIBILITY FOR CARE OF PATIENTS ON THIS SERVICE**

If new admissions or consultations are sufficiently stable, R3's are responsible for the initiate history, physical examination, and diagnostic approach to be suggested. These are reviewed with the Pulmonary and Critical Care fellow and attending. If patient acuity warrants more rapid attention, the initial evaluation and approach is done by the R3, fellow and faculty member simultaneously. Each new consultation is evaluated by a Pulmonary and Critical Care Medicine attending on the same day as the consultation is received. Attendings examine and review the care of each patient and write progress notes at least once daily, or as indicated. The R3's or fellows are responsible for complete consultation notes and follow-up notes as indicated.

Each patient seen in the outpatient setting is evaluated by the R3 or fellow, and reviewed by the attending during that visit. The R3's or fellows are responsible for dictating the evaluation and recommendations, in addition to the required dictation by the attending physician.