

# Pulmonary Diseases Rotation 2008 – 2009

## Overview

The Pulmonary Diseases rotation for residents provides both in-patient and out-patient experiences. It includes clinics and hospital consultations, as well as interpretation of pulmonary function tests, review of chest radiographs and CT scans, review of laboratory and pathology materials, observation of pulmonary procedures, and attendance at didactic conferences. Learning is centered in the management of patients. Residents are evaluated using the six competencies developed by the ACGME. Patient care is provided at LSU Hospital and the VA Medical Center Hospital. Residents will generally work at only one of these hospitals during the pulmonary elective.

## Learning Venues/ Activities

Pulmonary Consultation rounds: Rounds with the assigned fellow and staff are conducted five days a week. Patients are interviewed and examined, and relevant data such as pulmonary function tests, radiographic studies, laboratory studies, and biopsies are reviewed. The team discusses the differential diagnosis, develops a management plan, and recommends further testing or a course of treatment as appropriate. Patients are counseled. The team follows-up patients to ensure that the plan and treatment were appropriate.

Review of Pulmonary Function Tests: Spirometry and pulmonary function tests are reviewed on an as needed basis in the care of in-patients. Tests are also reviewed as patients are seen in clinics. Additionally, outpatient tests are reviewed several times a week by the staff and fellows at both LSU and VA Hospitals.

## Pulmonary Conferences:

- *Pulmonary Review Conference*. Friday 12-1 p.m., LSU room 5-337. This conference reviews important topics in Pulmonary Medicine. Presentations are made by both faculty and pulmonary fellows. A journal club format is used once a month. This is a combined conference for LSU and VA staff, fellows, and residents.
- *Pulmonary Clinical Conference*, Friday 1-2 p.m., LSU room 3-322. This conference uses a clinical–radiological format. A case is presented as an “unknown” by the pulmonary fellow. Attendees are asked to interpret the radiographic studies and to provide a differential diagnosis. This is a combined conference for LSU and VA faculty, fellows, and residents.
- *Sleep Medicine Ground Rounds*. Wednesday 2:00-3:00 p.m., LSU Dept of Psychiatry Conference Room. This is a multidisciplinary conference that

covers a broad range of pulmonary and non-pulmonary topics in the field of Sleep Medicine. Presentations are made by faculty and fellows. This is a combined conference for LSU and VA staff, fellows, and residents.

#### Outpatient Clinics at LSUHSC:

- *Pulmonary Oncology & Stat Clinic.* Tuesday 1-5 p.m., Feist-Weiller Cancer Center. This is a multidisciplinary pulmonary & oncology clinic with emphasis on the diagnostic workup of lung nodules and the continuing care of patients with lung cancers.
- *Pulmonary Clinic.* Thursday 1-5 p.m., second floor, Ambulatory Care Center. This is a general pulmonary clinic. Major diseases treated in this clinic include asthma, COPD, sarcoidosis and other interstitial lung diseases, pleural disease, and pulmonary infections.

#### Outpatient Clinics at VA Medical Center:

- *Sleep Clinic.* Monday 8 a.m.-12 p.m. and Thursday 8 a.m.-12 p.m. VA 5<sup>th</sup> Floor Clinic. These are general sleep medicine clinics. New patients are evaluated for sleep-related breathing disorders as well as neurological, psychiatric, and other sleep disorders. Sleep tests are reviewed.
- *Tuesday Pulmonary Clinic.* 8 a.m.-12 p.m. VA 5<sup>th</sup> Floor Clinic. The emphasis of this clinic is the workup and treatment of patients with lung nodules or cancer of the lung. Other patients are also seen as needed.
- *Wednesday Pulmonary Stat Clinic.* 1-5 p.m, VA 5<sup>th</sup> Floor Clinic. This is a general pulmonary clinic with emphasis on patients who must be seen with a quick turn around from hospital discharge or some other urgent reason. Patients include but are not limited to recent hospital discharges for pneumonia, exacerbations of COPD, follow-up of cytotoxic therapy of interstitial disease.

#### Learning Resources

- Standard Medicine textbooks
- General pulmonary disease textbooks
  - George RB, Light RW, Matthay MA, Matthay RA. Chest Medicine. Essentials of Pulmonary and Critical Care Medicine, 5<sup>th</sup> edition, 2006. (Very user friendly general textbook. On reserve in library).
  - Murray JF, Nadel JA. Textbook of Respiratory Medicine, 4<sup>th</sup> edition, 2005. (Comprehensive pulmonary and critical care text. On reserve in library).
- Relevant sections of UpToDate
- Published consensus guidelines (see websites below)

- Reading list: See the online American Thoracic Society reading list, which is updated annually: [www.thoracic.org/go/atsreadinglist](http://www.thoracic.org/go/atsreadinglist).
- Useful Internet websites
  - American Thoracic Society: [www.thoracic.org](http://www.thoracic.org)
  - American College of Chest Physicians: [www.chestnet.org](http://www.chestnet.org)
  - American Academy of Sleep Medicine (see professional standards; clinical practice guidelines): [www.aasmnet.org](http://www.aasmnet.org)
  - American Academy of Allergy, Asthma and Immunology: [www.aaaai.org](http://www.aaaai.org)
  - American Cancer Society: [www.cancer.org](http://www.cancer.org)
  - Centers for Disease Control: [www.cdc.gov](http://www.cdc.gov)

### **Evaluation Methods**

- Global faculty evaluation at end of rotation (*all competencies*)
- Clinical evaluation exercises: Interviewing skills, examination skills; counseling skills; medical knowledge and diagnostic interpretation; documented through *MyEvaluations* (*medical knowledge, patient care; interpersonal and communication skills*)
- Specific medical knowledge and diagnostic interpretation exercises may focus on:
  - Interpretation of chest radiographs and CT scans
  - Interpretation of pulmonary function testing
  - Interpretation of pleural fluid analysis

### **Pulmonary Subspecialty Coordinator**

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### **Educational Goals**

#### **Patient Care**

- Learn to obtain a focused history and develop a differential diagnosis on patients with the following symptoms: dyspnea, cough, hemoptysis.
- Learn to evaluate pleural effusion of unknown etiology appropriately: obtain a history and conduct a physical examination; evaluate radiographs and pleural fluid laboratory studies; develop a differential diagnosis based on this information.
- Learn the appropriate management of asthma: obtain a history, perform a focused examination, and interpret spirometry; assess the severity of the disease, and plan a therapeutic regimen to achieve or maintain control.
- Learn the appropriate management of chronic obstructive pulmonary disease (COPD): Obtain a history, perform an examination, and interpret a pulmonary function tests; plan a therapeutic regimen for the patient; understand the difference in the approach to the treatment of COPD and asthma.

- Learn the methods of prophylaxis of thromboembolic disease: review a patient history; determine the risk factors for thromboembolic disease; and plan the appropriate measures for prophylaxis, including both the specific therapy and time frame in which it is required.

### Medical Knowledge

- Understand the differential diagnosis of a solitary pulmonary nodule and the approach to evaluation: review the chest radiograph and CT; recognize the radiographic features that distinguish benign from malignant nodules.
- Learn to interpret chest radiographs appropriately: evaluate normal structures, recognize patterns of interstitial disease; understand the differential diagnosis of alveolar infiltrates and pleural disease.
- Learn to interpret pulmonary function tests appropriately: diagnose airway obstruction, restrictive disease, and alterations in diffusing capacity; recognize the response to bronchodilators; gauge the severity of disease.
- Interpret pleural fluid studies appropriately: distinguish transudates from exudates; develop a differential for lymphocytic effusions; diagnose parapneumonic effusions and empyemas.
- Know the differential diagnosis of interstitial lung disease: understand the diagnostic categories of interstitial lung disease; recognize patterns of interstitial lung disease on both chest x-ray and CT scan; plan a diagnostic workup for common types of interstitial lung disease (idiopathic pulmonary fibrosis, sarcoidosis, occupational lung disease, collagen-vascular disease).
- Know the spectrum of clinical findings in sarcoidosis: understand the major system involvement (pulmonary, renal, skin, neurological, cardiac).
- Interpret tuberculin skin tests appropriately: learn the correct application and measurement of the tuberculin skin test; understand the significance of positive tests of different degrees, negative tests, and booster testing.
- Know the approach to the diagnosis and therapy of obstructive sleep apnea: understand the symptoms and signs that suggest sleep apnea; develop a differential for excessive daytime somnolence; gain understanding of the polysomnogram report; and understand the various forms of therapy for sleep apnea.

### Practice-based Learning and Improvement

- Research one or more key clinical questions related to a learning objective under the *Patient Care* and *Medical Knowledge* competencies.

### Systems-Based Practice

- Know the Medicare and Medicaid regulations for oxygen therapy.

### Interpersonal communication skills

- Discuss the methods for smoking cessation with a patient: explain the harm of continued smoking and health benefits from stopping smoking; offer suggestions for non-pharmacological and pharmacological methods to assist with smoking cessation.

## **Common Subspecialty Educational Goals**

### **Interpersonal and Communication Skills**

- Develop skill in interviewing patients with problems in the scope of the subspecialty, with attention to education and culturally-sensitive language.
- Develop skill in giving a focused presentation of clinical findings to the attending faculty.
- Develop skill at communicating findings and recommendations of consultations to primary physicians, both verbally and in writing
- Learn to communicate appropriate information to patients who are seen in consultation, and in obtaining informed consent for procedures performed by the subspecialty.

### **Professionalism**

- Demonstrate a commitment to excellence and continuous professional development.
- Demonstrate punctuality and preparation for consultation rounds.
- Demonstrate courteous and professional behavior during encounters with patients and families.
- Demonstrate appropriate professional relationships with colleagues, faculty, and other members of consultation team.
- Demonstrate respect for patients' primary physicians in discussions with patients and within the consult team.
- Demonstrate a habit of evaluating consultations patients and conveying information in a timely manner

### **Practice-based Learning and Improvement**

- Demonstrate a pattern of self-evaluation of performance, identifying gaps in medical knowledge during the evaluation and management of patients, and incorporating feedback into performance.
- Demonstrate a pattern of replicating the effective clinical decision making of faculty and fellows
- Demonstrate a pattern of independent reading and study related to the diseases encountered in the clinics and through hospital consultations.
- Demonstrate a pattern of using library and Internet resources to appraise the literature related to problems encountered during the rotation, and of applying evidence to patient care.
- Learn to critically appraise articles in the subspecialty.

### **Systems-based Practice**

- Develop an understanding of the hospital resources available to the evaluation and management of patients with problems encountered by the subspecialty.

- Demonstrate sensitivity to health care costs, and insight into balancing costs and quality care.
- Demonstrate sensitivity in working with case managers, clinical coordinators, technicians, and other paramedical personnel to enhance the effectiveness of patient care.
- Demonstrate a knowledge of and commitment to the rules governing confidentiality of patient information.

### **Suggested Reading List**

#### **Pulmonary Thromboembolism:**

1. Bates SM, Ginsburg JS. Treatment of deep vein thrombosis. NEJM 351:268-277, 2004. Clinical practice guide.
2. Fedullo PF, Tyson VF. The evaluation of suspected pulmonary embolism. NEJM 349:1247-1256, 2003. Clinical practice guide.
3. Lee AYY, Hirsh J. Diagnosis and treatment of venous thromboembolism. Annu Rev Med 53:15-33, 2002. (Review article).
4. Anderson FA, Spencer FA. Risk factors for venous thromboembolism. Circulation 107 (23 Suppl. 1)I9-16, 2003.
5. Hyers TM. Management of venous thromboembolism; past, present, future. Arch Int Med 163:759-768, 2003.

#### **Asthma:**

1. National Asthma Education and Prevention Program website: [www.nhlbi.nih.gov/about/naepp/](http://www.nhlbi.nih.gov/about/naepp/). See "Health related information"; then "Health care/other professional" for the detailed guides to asthma care.
2. Sin DD, Man J, Sharpe H, et al. Pharmacological management to reduce exacerbation in adults with asthma: a systematic review and meta-analysis. JAMA 292:367-376, 2004.
3. Busse WW, Lemanske RF. Asthma. NEJM 344:350-362, 2001. (Review of pathophysiology of asthma).
4. Allen DB, Bielong L, Derendorf H. Inhaled corticosteroids: past lessons and future issues. J Allergy Clin Immunol 112(3 Suppl)S1-S40, 2003. (Discusses benefits, side effects and compliance issues with long term inhaled steroids)
5. Banks DE. Occupational asthma: the big picture. Occupational Medicine: State of the art reviews. 15:335-357, 2000.

#### **Chronic Obstructive Pulmonary Disease:**

1. Pauwels RA, Buist AS, Calverley PM, et al. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. Am Rev Respir Crit Care Med 163: 1256-1276, 2001. (NHLBI/WHO workshop summary).
2. Sutherland ER, Cherniack RM. Management of COPD. NEJM 350:2689-2697, 2004.
3. Sin DD, McAlister FA, Man SF, et al. Contemporary management of COPD: scientific review. JAMA 290:2301-2312, 2003.

4. Tashkin DP, Cooper CB. The role of long acting bronchodilators in the management of COPD. *Chest* 125:249-259, 2004.
5. Alsaeedi A, Sin DD, McAlister FA. The effects of inhaled corticosteroids in COPD: a systematic review of randomized placebo-controlled trials. *Am J Med* 113:59-65, 2002.

#### Interstitial Lung Diseases:

1. American Thoracic Society and European Thoracic Society. Idiopathic pulmonary fibrosis: diagnosis and treatment. *Am J Resp Crit Care Med* 161:646-664, 2000. (International consensus statement specific to IPF).
2. American Thoracic Society and European Thoracic Society. International multidisciplinary consensus classification of the idiopathic interstitial pneumonias. *Am J Resp Crit Care Med* 165:277-304, 2002. (International consensus statement on the broad category of idiopathic fibrosis disorders).
3. Pittsburg Lung Conference. Imaging of the idiopathic interstitial lung diseases. *Am J Resp Cell Molecular Biol.* 29(# 3 supplement): S10-S18, 2003.

#### Sarcoidosis:

1. Newman LS, Rose CS, Maier LA. Sarcoidosis. *NEJM* 336:1224-1233, 1997. (Review article).
2. Sharma OP. Sarcoidosis. *Clinics in Chest Medicine Volume 18 (#4)*, 1997. (Entire issue on sarcoidosis).
3. Hunninghake GW, Gilbert S, Pueringer R, et al. Outcome of the treatment for sarcoidosis. *Am J Resp Crit Care Med* 149:893-898, 1994. (Useful treatment protocol using steroids).

#### Sleep Apnea:

1. Fogel RB, White DP. Obstructive sleep apnea. *Advances in Internal Medicine* 45:351-389, 2000. (Comprehensive review).
2. Strollo PJ, Rogers RM. Obstructive sleep apnea. *NEJM* 334:99-104, 1996. (Brief review).
3. American Academy of Sleep Medicine. Sleep-related breathing disorders in adults: recommendations for syndrome definition and measurement techniques in clinical research. *Sleep* 22:667-689, 1999.
4. Loubé DI, Gay PC, Strohl KP, et al. Indications for positive airway pressure treatment of adult obstructive sleep apnea patients: a consensus statement. *Chest* 115:863-866, 1999.
5. Mbbs JR. Definition and diagnosis of upper airway resistance syndrome. *Sleep* S4:193-196, 2000.
6. Ayappa, I, Norman RG, Krieger AC. Noninvasive detection of respiratory-effort related arousals (RERA's) by a nasal cannula/pressure transducer system. *Sleep* 23:763-771, 2000.

#### Solitary Pulmonary Nodule:

1. Ost D, Fein, AM, Feinsilver SH. The solitary pulmonary nodule. *NEJM* 348:2535-2542, 2003. (Clinical practice).

2. Tan RB, Flaherty KR, Kazerooni EA, et al. The solitary pulmonary nodule. *Chest* 123:89S-96S, 2003.
3. Libby DM, Smith JP, Altorki NK, et al. Managing the small pulmonary nodule discovered by CT. *Chest* 125:1522-1529, 2004.
4. Leef JL, Klein JS. The solitary pulmonary nodule. *Radiologic Clinics of North America*. 40:123-143, 2002. (Excellent review from the radiology perspective).

#### Cigarette Smoking:

1. Rigotti NA. Treatment of tobacco use and dependence. *NEJM* 346:506-512, 2002. (Clinical practice).
2. US Public Health Service. A clinical practice guideline for treating tobacco use and dependence. *JAMA* 283:3244-3254, 2000. (Consensus statement).
3. Hughes JR, Goldstein MG, Hurt RD, et al. Recent advances in the pharmacotherapy of smoking. *JAMA* 281:72-76, 1999.

#### Pleural Disease:

1. Light RW. Pleural effusion. *NEJM* 346:1971-1977, 2002.
2. Maskell NA, Butland RJA. British Thoracic Society guidelines for the investigation of a unilateral pleural effusion in adults. *Thorax* 58 (Suppl II): 8-17, 2003.
3. Davies CWH, Gleeson FV, Davies RJO, et al. British Thoracic Society guidelines for the management of pleural infection. *Thorax* 58 (Suppl II): 18-28, 2003.

#### PPD Skin Testing:

1. Huebner RE, Schein, MF, Bass JB. The tuberculin skin test. *Clin Infect Dis* 17:968-975, 1993.
2. Pesanti EL. The negative tuberculin skin test. Tuberculin, HIV and anergy panels. *Am J Resp Crit Care Med* 149:1699-1709, 1994.
3. Thompson NJ, Glassroth JL, Snider DE, et al. The booster phenomenon in serial tuberculin testing. *Am Rev Respir Dis* 119:587-597, 1979.
4. ATS/CDC/IDSA Treatment of tuberculosis. *Am J Resp J Crit Care Med* 162:603-662, 2003.

#### Radiology: CXR and CT:

1. Goodman LR, editor. Felson's Principles of Chest Roentgenology, 2<sup>nd</sup> edition, 1999. (A classic for the student, houseofficer. First edition is in the library: WF975 F324f 1973).
2. See relevant chapters in "George" and "Murray & Nadel" textbooks.

#### Pulmonary Function Testing:

1. American Thoracic Society. Standardization of spirometry 1994 update. *Am J Resp Crit Care Med* 152:1107-1136, 1995.
2. American Thoracic Society. Lung function testing: selection of reference values and interpretative strategies. *Am Rev Resp Dis* 144:1202-1218, 1991.

3. Evans SE, Scanlon PD. Current practice in pulmonary function testing. Mayo Clinic Proceed. 78:758-763, 2003. (Practical case example).
4. See relevant chapters in “George” and “Murray & Nadel” textbooks.

#### Home Oxygen:

1. Crockett, AJ, Cranston JM, Moss JR, et al. A review of long-term oxygen therapy. Respiratory Medicine 95:437-443, 2001. (Recent review).
2. Tiej BJ. Long-term home oxygen therapy. Clinics in Chest Medicine 11:505-521, 1990. (Old, but useful & relevant guide).
3. Petty TL. Supportive therapy in COPD. Chest 113 (4 Suppl): 256S-262S, 1998. (Home oxygen therapy).
4. Pauwels RA, Buist AS, Calverley PM, et a. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. Am Rev Respir Crit Care Med 163: 1256-1276, 2001. (Includes section on home oxygen).

#### Pulmonary Symptoms:

1. *Cough*: Irwin RS, Madison, JM. The diagnosis and treatment of cough. NEJM 343:1715-1721, 2000.
2. *Hemoptysis*: See Up to Date website using the following subject headings: Etiology and evaluation of hemoptysis; Diagnostic approach to massive hemoptysis; Causes and management of massive hemoptysis.
3. *Dyspnea*: see general textbooks.