

Pulmonary and Allergy Subspecialty Clinic
Rotation Goals and Objectives
Pulmonary/Critical Care Medicine Fellowship Program
University of Nebraska Medical Center
Revised: June 2008

- I) Rotation Goals
 - A) To accrue clinical experience in the evaluation, diagnosis and management of patients with a variety of illnesses referred to a pulmonary medicine or allergy specialist
 - B) To develop skills required of a good consultant
 - C) To gain medical knowledge in the fields of allergy, asthma, pulmonary environmental or occupational medicine and severe pulmonary disease including pulmonary hypertension

- II) Core competencies for this rotation
 - A) Patient Care
 - 1) To manage patients with a variety of illnesses common to a general pulmonary practice
 - 2) To order appropriate testing required for the diagnosis and treatment of pulmonary illnesses
 - 3) The fellow will be expected to perform outpatient procedures which he/she will be expected to perform in practice according to the program requirements outlined by the ACGME
 - 4) To demonstrate proper management of therapy for pulmonary illnesses
 - 5) To demonstrate an ability to work with others to provide patient-focused care
 - 6) Evaluation methods for this competency
 - (a) Attending evaluation
 - (b) Clinic nurses and the PFT Lab staff evaluations
 - (c) Mini-CEX (to be arranged with attending)

 - B) Medical Knowledge
 - 1) Demonstrate a fund of knowledge commensurate with the level of training
 - 2) Demonstrate an ability to use that knowledge to solve outpatient-based medical problems
 - 3) To read any seminal literature covering topics in allergy, asthma, environmental/occupational pulmonary disease and pulmonary hypertension.
 - 4) To read the appropriate chapters in a Pulmonary Medicine text covering topics listed above.
 - 5) Allergy, Asthma and Immunology Objectives
 - (a) Understand the indication(s) for allergy immunotherapy in patients with allergic rhinitis and asthma.
 - (b) Understand the role of aspirin-induced respiratory disease including association with nasal polyposis and alternative aspirin desensitization therapies.
 - (c) Understand the differential diagnosis for bronchiectasis and be able to initiate an immune deficiency evaluation.
 - (d) Understand and recognize vocal cord dysfunction and its diagnosis and treatment.
 - 6) Evaluation methods for this competency
 - (a) Attending evaluation
 - (b) Chart-stimulated recall sessions

 - C) Practice-based Learning and Improvement
 - 1) Select one performance measure to demonstrate improvement over the course of the month in clinic
 - 2) Demonstrate an ability to locate and apply scientific evidence to the care of patients including the use of the Cochrane Database and other online sources
 - 3) Demonstrate an ability to read and critically appraise at least one clinical study applicable to a patient seen in clinic
 - 4) Facilitate the learning of other health care professionals
 - 5) Evaluation methods for this competency
 - (a) Attending evaluation
 - (b) Chart-stimulated recall sessions

D) Interpersonal & Communication Skills

- 1) Demonstrate an ability to develop a therapeutic relationship with patients and their families
- 2) Demonstrate an ability to use verbal and non-verbal skills to communicate effectively with patients
- 3) Demonstrate an ability to work effectively as a team member or leader
- 4) Evaluation methods for this competency
 - (a) Attending evaluation
 - (b) Evaluations from key consultants
 - (c) Evaluations from clinic nurses and the PFT Lab staff
 - (d) Mini-CEX

E) Professionalism

- 1) Demonstrate integrity and honesty
- 2) Accept responsibility for direct patient care activities
- 3) Always act in the best interest of the patient
- 4) Demonstrate a sensitivity to patient's ethnicity, age and disability
- 5) Evaluation methods for this competency
 - (a) Attending evaluation
 - (b) Evaluations from key consultants
 - (c) Evaluations from clinic nurses and the PFT Lab staff
 - (d) Mini-CEX

F) System-based Practice

- 1) Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society
- 2) Practice cost-effective health care and resource allocation that does not compromise quality of care
- 3) Advocate for quality patient care and assist patients in dealing with system complexities.
- 4) Evaluation methods for this competency
 - (a) Attending evaluation
 - (b) Evaluations from key consultants
 - (c) Evaluations from clinic nurses and the PFT Lab staff
 - (d) Mini-CEX

III) Instructional Methods

A) Clinical experience on this selective rotation

- 1) The PCCM subspecialty resident on this rotation spend up to a full calendar month on the Specialty Outpatient Rotation in the UNMC Physicians Clinic at the Nebraska Medical Center, providing high quality and timely care to include:
 - (a) Pulmonary consultative care for outpatients in the UNMC Physicians Clinic.
 - (i) Patients will be seen in Allergy, Asthma and Immunology Clinic, Cystic Fibrosis Clinic, Pulmonary Hypertension Clinic, Lung Nodule/Cancer Clinic and Occupational Pulmonary Medicine Clinic.
 - (b) Primary care for patients seen in Pulmonary, Critical Care, Sleep Medicine and Allergy Section subspecialty clinics

B) Clinical Teaching

- 1) Faculty will be expected to discuss each clinical presentation by the fellow and provide guidance as needed on diagnosis and treatment
- 2) The fellow will be expected to gather appropriate data and present in a succinct, yet complete manner

C) Performance Feedback

- 1) The faculty will provide feedback on a regular basis, at least weekly, on what the fellow has done well and what could be improved

D) Didactic Sessions

- 1) Attend all scheduled conferences within the PCCM Section, especially the clinical case conference.
- 2) Attend all internal medicine conferences as appropriate.

E) Self-Learning

- 1) Review literature appropriate to care of patients in the subspecialty outpatient clinics.
- 2) Fellows will be expected to read the appropriate chapters in a Pulmonary Medicine textbook of their choice. Appropriate sections of eMedicine or Up-to-Date may be substituted.
- 3) Complete the reading assignments for each specialty clinic as outlined below. Time not scheduled in clinic should be used for completing the readings.

IV) Responsibilities

A) Fellow

- 1) These guidelines for the Subspecialty Outpatient rotation will be made available to each fellow and must be read prior to starting the rotation
- 2) Participate in all patient care responsibilities expected in the clinic
- 3) Provide education to any residents or students who may be assigned to the clinic.
- 4) Complete an evaluation of the rotation and the attending.
- 5) Take at-home call as scheduled

B) Clinic Attending

- 1) These guidelines for the Subspecialty Outpatient rotation will be made available to clinic attendings and the attending-specific goals and objectives must be reviewed with the fellow at the start of the rotation
- 2) The attending should review the clinic schedule prior to the day of clinic to provide reading assignments for the fellow regarding specific problems to be seen. This makes the interaction a greater learning experience for the fellow.
- 3) Supervise procedures performed by the fellow
- 4) Provide education to the fellow regarding management of patients
 - (a) Education will include instructions on filling out the billing sheet for the attending's clinic
 - (b) Attendings are encouraged to arrange time to discuss topics or specific readings related to the patient problems typically seen in their clinic or for chart-stimulated recall sessions.
- 5) Complete an evaluation of the fellow.

C) Rotation

1) Clinic Responsibility

- (a) Attend each assigned clinic unless excused by the attending for that clinic
- (b) Be in the clinic at the assigned start time and remain until excused by the attending

2) On Call Responsibility

- (a) Be available from 8:00 am to 5:00 PM except for officially sanctioned events, i.e. any section conferences
- (b) Take after hours call as assigned by the Program Director.

3) Vacation

- (a) Vacation time may be taken during this rotation.
- (b) Emergency leave may be requested after discussion with the Program Director or surrogate (Clinic attending for days to be missed)

V) Methods of Evaluation

A) Focused Observation and Evaluation

- 1) The Clinic Attending should give immediate feedback after each patient presentation and a formal verbal evaluation should be given at the mid-point of the rotation. A mini-CEX form may be used to formalize observation of the fellow and their evaluation of the patient. These are available from Sheryl Latenser, the program coordinator. (943-5515)

B) Clinical Performance Ratings

- 1) Each clinic attending must prepare a written evaluation of the fellow at the conclusion of the rotation. This evaluation will assess each of the competencies as listed in the educational objectives above.
- 2) The assessment should be reviewed personally by the fellow in the presence of the attending physician.

C) 360 degree Assessment

- 1) Evaluations will be sent to health care professionals in the clinic who interact with the fellow. They will include PA's, Nurse Practitioners, Nurses, Respiratory Therapists and Clerks. These evaluations will focus on the fellow's professionalism.

D) Fellow Evaluations of Attending(s) and Rotation

- 1) At the conclusion of the fellow's service period, he/she should complete an evaluation form assessing the quality of the rotation; he/she should also address the teaching undertaken by the attending physician(s).

VI) Readings

A) Readings are from the ATS Reading List (unless otherwise noted) found at:

- 1) <http://www.thoracic.org/sections/career-development/fellows-and-fellowships/ats-reading-list-intro.html>

B) Severe Asthma – Jill A. Poole, MD

Web site for latest treatment guidelines: <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>

Inhaled steroids vs. bronchodilators

- 1) Nelson HS, Weiss ST, Bleecker ER, Yancey SW, Dorinsky PM, SMART Study Group. The salmeterol multicenter asthma research trial. Chest 2006; 130:928. This randomized, double-blinded, placebo-controlled, observational study (N= 26,355) showed a small, but statistically significant increase in respiratory-related and asthma-related deaths for the population receiving salmeterol. It is uncertain whether poor outcomes were due to physiologic treatment effects, genetic factors, or patient behaviors. http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=16424409&ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum
- 2) Haahtala T, Jarvinen M, Kava T, et al. Comparison of a beta-agonist, terbutaline, with an inhaled corticosteroid, budesonide, in newly detected asthma. New Engl J Med 1991; 325:388-92. This randomized, blinded comparison of the above two drugs was important in establishing inhaled corticosteroids as the first line treatment for asthma. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2062329
- 3) Suissa S, Blais L, Ernst P. Patterns of increasing beta-agonist use and the risk of fatal or near-fatal asthma. Eur Respir J 1994;7:1602-9. Nested case control study found increased and escalating use of beta-agonists was associated with an increased risk of death from asthma. Findings suggest poorly controlled asthma should not be managed with increased dosage of beta-agonists alone. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7995388
- 4) Lazarus SC, Boushey HA, Fahy JV et al. Long-acting beta2-agonist monotherapy vs. continued therapy with inhaled corticosteroids in patients with persistent asthma: a RCT. JAMA 2001;285:2583-93. Switching from low dose ICS to long-acting beta2-agonist in patients with well-controlled, persistent asthma increased the risk of treatment failure and asthma exacerbations.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1136732

Inhaled steroid vs. leukotriene receptor antagonists

- 5) Laviolette M, Malmstrom K, Lu S, et al. Montelukast added to inhaled beclomethasone in treatment of asthma. *Am J Respir Crit Care Med* 1999;160:1862-68. This randomized, double-blinded study supports the addition of a leukotriene inhibitor for asthmatics with inadequate symptom control with inhaled corticosteroid alone. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10588598
- 6) Malmstrom K, Rodriguez-Gomez G, Guerra J, et al. Oral montelukast, inhaled beclomethasone, and placebo for chronic asthma. A randomized controlled trial. *Ann Intern Med* 1999;130:487-95. Both inhaled steroid and a leukotriene inhibitor were better than placebo. Beclomethasone was significantly better than montelukast in reducing exacerbations and symptoms. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10075616

Mild persistent asthma

- 7) O'Byrne PM, Barnes PJ, Rodriguez-Roisin R, et al. Low dose inhaled budesonide and formoterol in mild persistent asthma: the OPTIMA randomized trial. *Am J Respir Crit Care Med* 2001;164:1392-7. Large RCT found adding a long-acting beta-agonist in mild persistent asthmatics already on ICS was more efficacious than doubling the dose of ICS. Patients not already on an ICS had fewer severe exacerbations and better symptom control compared to placebo after addition of low dose ICS. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11704584&query_hl=2&itool=pubmed_DocSum
- 8) Pauwels RA, Pedersen S, Busse WW, et al. Early intervention with budesonide in mild persistent asthma: a randomized, double-blind trial. *Lancet* 2003;361:1071-6. Large RCT of steroid-naïve patients with asthma history of less than 2 years found use of ICS reduced risk of severe asthma exacerbation by 44% (about 6% vs. 3.4%) compared to placebo after 3 years of follow-up. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12672309&query_hl=4&itool=pubmed_DocSum
- 9) Boushey HA, Sorkness CA, King TS, et al. Daily versus as-needed corticosteroids for mild persistent asthma. *New Engl J Med* 2005; 352:1519-28. A smaller, year-long study of 225 adults randomized to prn corticosteroids based upon symptom-based action plan vs. daily treatment with ICS vs. daily leukotriene inhibitor found no difference in morning peak expiratory flow and the rate of asthma exacerbations despite the prn corticosteroid group using an average of only 0.5 week of steroid per year. The ICS group had superior asthma control scores and lower markers of airway inflammation. Some attribute this relatively modest benefit of regular ICS use to the lower exacerbation rate in this study compared to its predecessors, which speaks to the challenge of identifying mild persistent asthmatics. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15829533&query_hl=6&itool=pubmed_docsum

Use of combination therapy for maintenance and rescue

- 10) O'Byrne PM, Bisgaard H, Godard PP, et al. Budesonide/formoterol combination therapy as both maintenance and reliever medication in asthma. *Am J Respir Crit Care Med* 2005; 171:129-36. This study included 2,760 asthmatics with a history of at least one exacerbation in the previous year and regular need for rescue bronchodilators despite baseline use of, on average, moderate doses of inhaled corticosteroid. Patients randomized to budesonide/formoterol (80/4.5) bid and prn had prolonged time to exacerbations requiring medical intervention compared to combination therapy with terbutaline prn or higher dose steroid (budesonide 320 bid) plus terbutaline prn. Subsequent RCTs have also shown favor outcomes with this approach. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=15502112&query_hl=9&itool=pubmed_DocSum

Anti-IgE therapy

- 11) Busse WW. Anti-immunoglobulin E (omalizumab) therapy in allergic asthma. *Am J Respir Crit Care Med* 2001;164(8Pt2):S12-7. Review summarizes several large RCTs studying the role of anti-IgE antibody in

allergic asthma. The use of anti-IgE is associated with decreased frequency of exacerbations, reductions in corticosteroid dose, and improved quality of life in symptomatic patients with moderate to severe allergic asthma.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11704612

Exercise-induced

- 12) Edelman JM, Turpin JA, Bronsky EA, et al. Oral montelukast compared with inhaled salmeterol to prevent exercise-induced bronchoconstriction. A randomized, double-blind trial. *Ann Intern Med* 2000;132:97-104. Study found leukotriene blockade has equal efficacy to a beta-agonist for the prevention of EIB and that daily administration is not associated with a reduction in efficacy that is seen with daily dosing of long-acting beta agonists.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10644288

Airway remodeling

- 13) Lange P, Parner J, Vestbo J, Schnohr P, Jensen G. A 15-year follow-up study of ventilatory function in adults with asthma. *New Engl J Med* 1998;339:1194-200. Noteworthy for being one of the studies showing that a portion of patients with asthma go on to develop fixed airway obstruction.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9780339

C) Allergy, Asthma & Immunology Clinic Rotation - Jill A. Poole, MD

1) Required Reading List for Pulmonary Fellows:

- (a) Allergic Rhinitis and its Impact on Asthma (ARIA) WHO
 - (i) Bousquet J, et al. *Allergy* 2002;57:841-855.
- (b) Allergen Immunotherapy
 - (i) Poole JA. *Washington Manual* 2004; pg 141-146.
 - (ii) Allergy Immunotherapy: Pro/Con Editorials
 - (iii) Bousquet J & Adkinson NF. *Am J Respir Crit Care Med* 2001; 164:2139-2142.
- (c) Prevention (PAT)-Study.
 - (i) Moller C, et al. *J Allergy Clin Immunol*; 2002;109:251-256.
- (d) The Salmeterol Multicenter Asthma Research Trial & Editorial Comment
 - (i) Nelson HS, et al. *Chest* 2006;129:15-26.
 - (ii) Byrne PM & Adelroth E. *Chest* 2006.
- (e) Aspirin-induced asthma: Review
 - (i) Szceklak A & Stevenson DD. *J Allergy Clin Immunol*; 2003;111:913-921.
- (f) Bronchiectasis: Causative Factors
 - (i) Pasteur MC, et al. *Am J Respir Crit Care Med* 2000;162:1277-1284.
- (g) Allergic bronchopulmonary aspergillosis
 - (i) Greenberger PA. *J Allergy Clin Immunol*; 2002;110:685-692.
- (h) Vocal Cord Dysfunction
 - (i) Mikita J & Parker. *Chest* 2006;129:905-908.

2) Optional Reading List for Pulmonary Fellows:

- (a) Pathophysiological classification of chronic rhinosinusitis. Baraniuk JN & Maibach. *Resp Research* 2005;6:149.
- (b) Common variable immune deficiency and granulomatous lung disease. Bates C, et al. *J Allergy Clin Immunol*; 2004;114:415-421.

D) Pulmonary Environmental/Occupational Medicine – Susanna VonEssen, MD

From the ATS Reading List <http://www.thoracic.org/sections/career-development/fellows-and-fellowships/ats-reading-list/occupational-medicine.html>

- 1) Nicholson PJ, Cullinan P, Taylor AJ, et al. Evidence-based guidelines for the prevention, identification, and management of occupational asthma. *Occup Environ Med* 2005;62:290-9. This comprehensive review gives

strong evidence behind classic admonitions, including those to reduce asthmagens at the source and to provide ample surveillance.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15837849&query_hl=14&itool=pubmed_docsum

- 2) Blanc PD, Toren K. How much adult asthma can be attributed to occupational factors? *Am J Med* 1999;107:580-7. Based on a critical review and synthesis of the published literature, the authors estimate occupational factors are associated with 10% of adult asthma cases.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10625027
- 3) Burge PS, O'Brien IM, Harries MG. Peak flow rate records in the diagnosis of occupational asthma due to isocyanates. *Thorax* 1979;34:317-24. Landmark study was the first to show peak flow is a suitable alternative to provocation testing in the diagnosis of OA.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=483205
- 4) Chan-Yeung M. Fate of occupational asthma. A follow-up study of patients with occupational asthma due to Western Red Cedar (*Thuja plicata*). *Am Rev Respir Dis* 1977;116:1023-6. This classic article demonstrated the frequent persistence of occupational asthma even months after removal from exposure to western red cedar. Subsequent studies found similar findings for other OA asthmagens, prompting heightened vigilance.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=931178&query_hl=16&itool=pubmed_DocSum
- 5) Brooks SM, Weiss MA, Bernstein IL. Reactive airways dysfunction syndrome (RADS): persistent asthma syndrome after high-level irritant exposures. *Chest* 1985;88:376-84. Landmark article describing 10 patients in which the term "RADS" was coined. In the majority of cases respiratory symptoms and hyper reactivity persisted for greater than 1 year after a large exposure to vapor, fumes, or smoke.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=4028848
- 6) Zock JP, Jarvis D, Luczynska C, et al. Housing characteristics, reported mold exposure, and asthma in European Community Respiratory Health Survey. *J Allergy Clin Immunol* 2002;110:285-92. Multicenter study looked at the association between mold exposure (based on questionnaire) and asthma (based on symptoms and methacholine challenge) and concluded that mold growth has an adverse effect on adult asthma.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12170270

Associations with interstitial lung disease and neoplasia

- 7) Selikoff IJ, Hammond EC, Churg J. Asbestos exposure, smoking, and neoplasia. *JAMA* 1968;204:106-12. Landmark study showing the synergistic effect of smoking and asbestos exposure on developing lung cancer.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=5694532
- 8) Wagner JC, Sleggs CA, Marchand P. Diffuse pleural mesothelioma and asbestos exposure in the NW Cape Province. *Br J Ind Med* 1960;17:260-71. Landmark study linking mesothelioma to asbestos exposure.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=13782506
- 9) Adverse effects of crystalline silica exposure. American thoracic society committee of the scientific assembly on environmental occupational health. *Am J Respir Crit Care Med* 1997; 155:761-8. Reviews the epidemiology and prevention of silica-associated lung diseases including silicosis, asthma, tuberculosis, and extrapulmonary diseases. This document is also available in Up-To-Date.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9032226
- 10) Rossman MD, Kern JA, Elias JA, et al. Proliferative response of bronchoalveolar lymphocytes to beryllium. A test for chronic beryllium disease. *Ann Intern Med* 1988;108:687-93. Article noteworthy for establishing the use of the lymphocyte proliferation test in the diagnosis of chronic beryllium disease.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3282464
- 11) Infante PF, Newman LS. Beryllium exposure and chronic beryllium disease. *Lancet* 2004;363:415-6. The authors highlight the lack of adequate protection for workers, the underdiagnosis of CBD by providers, and the growing number of industries in which exposure occurs.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14962519

Air pollution and cardiopulmonary disease

- 12) Dockery DW, Pope CA 3rd, Xu X, et al. An association between air pollution and mortality in six U.S. cities. *New Engl J Med* 1993; 329:1753-9. This seminal article linked fine particulate air-pollution with lung cancer and cardiopulmonary mortality, associations that have been duplicated in subsequent studies and been highly influential in public health policy.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8179653&query_hl=18&itool=pubmed_DocSum
- 13) Samet JM, Dominici F, Curriero FC, et al. Fine particulate air pollution and mortality in 20 U.S. cities, 1987-1994. *New Engl J Med* 2000; 343:1742-9. This article supports the findings of Dockery et al and provides a more sophisticated analysis allowing for a 'dose-response' characterization of particulate levels and of specific air pollution components.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11114312&query_hl=20&itool=pubmed_DocSum
- 14) Banauch GI, Hall C, Weiden M, et al. Pulmonary function after exposure to the World Trade Center collapse in the New York City Fire Department. *Am J Respir Crit Care Med* 2006; 174:312-9. This study found a large average adjusted decline in FEV1 among firefighters in the year following 9-11 (372 ml). Exposure intensity correlated linearly with exposure time.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16645172&query_hl=19&itool=pubmed_docsum

Environmental tobacco smoke

The following 2 articles are good examples of research documenting the impact of legislation to limit secondhand smoke on the health of non-smoking bar workers. See also "Smoking Cessation".

- 15) Eisner MD, Smith AK, Blanc PD. Bartenders' respiratory health after establishment of smoke-free bars and taverns. *JAMA* 1998; 280:1909-14. This study of 53 bartenders found a substantial reduction in respiratory and nasopharyngeal irritation symptoms along with modest improvements in spirometry.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?itool=abstractplus&db=pubmed&cmd=Retrieve&dopt=abstractplus&list_uids=9851475
- 16) Menzies D, Nair A, Williamson PA, et al. Respiratory symptoms, pulmonary function, and markers of inflammation among bar workers before and after a legislative ban on smoking in public places. *JAMA* 2006; 296:1742-8. This study of 77 non-smoking, asthmatic and non-asthmatic, bar workers found a significant decline in respiratory symptoms and improvement in FEV1 (FEV1 % predicted improved by 5.1%) in the first 2 months following a smoking ban. Asthmatics experienced greater improvement in FEV1 than non-asthmatics and had a significant reduction in exhaled nitric oxide.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=17032987&query_hl=22&itool=pubmed_docsum

E) Pulmonary Hypertension - Austin Thompson, MD

From the ATS Reading List <http://www.thoracic.org/sections/career-development/fellows-and-fellowships/ats-reading-list/pulmonary-hypertension.html>

- 1) Galie N, Ghofrani HA, Torbicki A, et al. Sildenafil citrate therapy for pulmonary arterial hypertension. *N Engl J Med*. 2005; 353:2148-57. Double-blind RCT comparing sildenafil (20, 40, or 80 mg; po tid x 12 weeks) and placebo in 278 patients with symptomatic pulmonary arterial hypertension found sildenafil improved exercise capacity, WHO functional class, and hemodynamics.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16291984&query_hl=4&itool=pubmed_docsum
- 2) Barst RJ, Rubin LJ, Long WA, et al. A comparison of continuous intravenous epoprostenol (prostacyclin) and conventional therapy for primary pulmonary hypertension. *New Engl J Med* 1996;334:296-301. RCT found the epoprostenol group had improved hemodynamics, quality of life, and survival.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8532025
- 3) Rich S, Kaufman E, Levy PS. The effect of high doses of calcium-channel blockers on survival in primary pulmonary hypertension. *New Engl J Med* 1992;327:76-81. Study with suboptimal design but convincing hemodynamic data found improved survival and is the basis for use of CCBs in patients with a good response to vasodilators.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1603139

- 4) Badesch DB, Tapson VF, McGoon MD, et al. Continuous intravenous epoprostenol for pulmonary hypertension due to scleroderma spectrum of disease. *Ann Intern Med* 2000; 132:425- 34. Noteworthy for showing benefit from prostacyclin in patients with a secondary cause of pulmonary hypertension. RCT found prostacyclin improved exercise tolerance, modestly reduced PA pressures, and improved dyspnea scores in some patients, but was associated with frequent side effects and more adverse events. No difference in survival, but trial was only 12 weeks duration.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10733441

- 5) Channick RN, Simonneau G, Sitbon O, et al. Effects of the dual endothelin-receptor antagonist bosentan in patients with pulmonary hypertension: a randomized placebo-controlled study. *Lancet* 2001; 358:1119-23 First study of chronic bosentan in 32 patients with primary or scleroderma-related pulmonary hypertension. Over the 12 weeks of the study, bosentan was well-tolerated and improved cardiac index and exercise capacity (70 meter gain in 6-minute walk). Similar results were obtained in a subsequent larger study of 213 patients (Rubin LJ et al. *New Engl J Med* 2002; 346:896-903).

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11597664

- 6) Arcasoy SM, Christie JD, Ferrari VA, et al. Echocardiographic assessment of pulmonary hypertension in patients with advanced lung disease. *Am J Respir Crit Care Med* 2003; 167:735-40. The cardiology literature indicates echocardiography-derived estimates of pulmonary artery pressures are accurate. This study found 52% of echo estimates were inaccurate (off by > 10 mmHg) in 166 lung transplant candidates and the difference was > 20 mmHg in 28%. In patients without hypertension, echo was more likely to overestimate pressures while in patients with pulmonary hypertension; it was as likely to over as underestimate. Accuracy and ability to obtain an estimate varied with the underlying disease.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12480614

University of Nebraska Medical Center
Pulmonary, Critical Care, Sleep & Allergy Medicine Section
Specialty Clinic Schedule

<u>UNMC</u>	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	8:00 – 12:00 PM	8:00 – 12:00 PM	8:00 – 12:00 PM	8:00 – 12:00 PM	8:00 – 12:00 PM
		Allergy Dr. Poole	Advanced Lung Disease Dr. Thompson		

<u>UNMC</u>	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
PM	1:00 – 5:00 PM	1:00 – 5:00 PM	1:00 – 5:00 PM	1:00 – 5:00 PM	1:00 – 5:00 PM
	Cystic Fibrosis Dr. Murphy	Nodules/Cancer Clinic Dr. Vasquez	Cystic Fibrosis Dr. Murphy	Allergy Dr. Poole	Occupational Medicine Dr. Von Essen

Contact information

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