Objectives for Environmental/Occupational Pulmonary Medicine
Pulmonary/Critical Care Medicine Fellowship Program
University of Nebraska Medical Center
Revised: December 28, 2012

I) Rotation Goals

A) To evaluate, diagnose and manage patients with suspected or known pulmonary illnesses of an environmental or occupational etiology.
B) To analyze case records and patient charts to determine the relative contribution of occupational exposures to disease.
C) To acquire skills and knowledge required to perform an Independent Medical Exam (IME).

II) Core Competencies for this rotation

A) Patient Care

1) Demonstrate an ability to obtain a comprehensive and accurate history of present illness for presentations of environmental or occupational pulmonary medicine.
2) Identify common historical elements for all patients presenting with pulmonary disease including smoking history, occupational history, sleep history, environmental triggers for respiratory symptoms and family history.
3) Demonstrate physical examination skills, specific to the respiratory system including examination of the upper airway, neck, chest, abdomen and extremities.
4) Demonstrate the ability to interpret complete pulmonary function testing including spirometry before and after bronchodilator therapy, lung volumes, diffusing capacity and exercise oximetry.
5) Order and interpret radiographic tests related to pulmonary diseases including chest roentgenograms, computed axial tomography scans, ventilation/perfusion studies and pulmonary angiograms to provide a therapeutic plan for the patient.
6) Apply the skills listed above to provide a clear, concise and legible consultation note and/or dictation, which directly answers the question asked by the primary care provider or third-party payer.
7) Demonstrate an ability to perform bronchoscopy, bronchoalveolar lavage and various bronchoscopic biopsy techniques.
8) Demonstrate an ability to interpret cardiopulmonary exercise tests, indirect calorimetry studies, six-minute walk distance and methacholine challenge tests in addition to other specialized tests, which may be performed in the pulmonary function laboratory.
9) List the indications and contraindications for insertion of various chest tubes for removal of fluid and/or air.
10) Demonstrate or describe the appropriate evaluation of: work related dyspnea, cough, occupational lung disease, occupational related cancers and the history of occupational pulmonary medicine.
11) Demonstrate effective communication through the informed consent process for minor procedures.
12) Demonstrate caring and respectful behaviors when interacting with patients.
13) Gather essential and accurate information from patients.
14) Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment

15) Develop and carry out patient management plans in association with the supervising physician

16) Counsel and educate patients and their families

17) Use information technology to support patient care decisions and patient education

18) Demonstrate competency in all medical and invasive procedures performed on this rotation

19) Demonstrate an ability to work with a variety of health care professionals to provide patient-focused care

20) Evaluation methods for this competency
   (a) Attending evaluation
   (b) Evaluations from clinic nurses
   (c) Optional Mini-CEX (to be arranged with attending)

B) Medical Knowledge

1) Demonstrate an ability to discuss recent readings relevant to patients seen in clinic.
2) Develop familiarity with seminal literature covering topics in occupational or environmental pulmonary medicine, especially those extant in patients seen in clinic.
3) Read appropriate chapters in a Pulmonary Medicine text or electronic resource
4) Read the suggested material listed at the end of this document.
5) Evaluation methods for this competency
   (a) Attending evaluation
   (b) Chart-stimulated recall sessions to be arranged with attending

C) Practice-based Learning and Improvement

1) Select appropriate billing codes for all evaluation and management or procedures.
2) Explain the process by which a new referral is scheduled, a new record is generated, the tracing of patient flow from check-in to check-out and how bills are generated and submitted to insurance.
3) 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.
4) Demonstrate an ability to read and critically appraise at least one clinical study applicable to a patient seen on the service. This will be judged by informal interaction with the attending therefore the fellow must mention this reading to the attending.
5) Evaluation methods for this competency
   (a) Attending evaluation
   (b) Chart-stimulated recall sessions to be arranged with attending

D) Interpersonal & Communication Skills

1) Demonstrate an ability to develop a therapeutic and ethically sound relationship with patients and their families.
2) Demonstrate an ability to use verbal and non-verbal skills to communicate effectively with patients.
3) Demonstrate effective listening skills
4) Elicit and provide information using effective nonverbal, explanatory, questioning and writing skills
5) Demonstrate an ability to work effectively as a team member and team leader within the clinic.
6) Demonstrate an ability to develop professional relationships with residents and other members of the health care team
7) Evaluation methods for this competency
   (a) Attending evaluation
   (b) Evaluations from clinic nurses
   (c) Mini-CEX (to be arranged with attending)

E) Professionalism

1) Demonstrate compassion, respect, integrity and honesty.
2) Accept responsibility for direct patient care activities.
3) Always act in the best interest of the patient.
4) Demonstrate a responsiveness to the needs of patients and society that supercedes self-interest
5) Demonstrate accountability to patients, society and the profession
6) Demonstrates a commitment to excellence and on-going professional development
7) Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent and business practices
8) Demonstrate sensitivity to patient’s culture, ethnicity, age, gender and disability.
9) Evaluation methods for this competency
   (a) Attending evaluation
   (b) Evaluations from clinic nurses
   (c) Mini-CEX (to be arranged with attending)

F) System-based Practice

1) The fellow should 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) Describe how the Independent Medical Exam is used in the legal system
5) Evaluation methods for this competency
   (a) Attending evaluation
   (b) Evaluations from clinic nurses

III) Instructional Methods

A) Clinical experience

1) The PCCM fellow on this rotation spends a full calendar month on the Occupational Pulmonary Medicine Rotation at the Nebraska Medical Center, providing high quality and timely care to include:

   (a) Pulmonary consultative care for outpatients of the Nebraska Medical Center.
   The fellow will:
   (i) Evaluate and provide effective care for Occupational Pulmonary patients
(ii) Perform an Independent Medical Exam (if available)

(b) Occupational and Environmental Experiences
   (i) The fellow should complete a tour of a work site chosen by the supervising physician to learn about specific occupational risks in that site. If available, the fellow should review the industrial-based pulmonary disease prevention plan outlined by (EPA, OSHA, NIOSH, etc.) prior to the visit.
   (ii) The fellow may attend, with the supervising physician, a civil court case involving potential compensation for an occupational injury.
   (iii) The fellow will complete at least 4 and up to 6 occupational case reviews during their time on service to help prepare them for performance of an Independent Medical Exam. The case reviews will be evaluated by the supervising physician for completeness.

2) Supervision and Performance of Procedures

   (a) The fellow will be expected to perform procedures for which competency has been demonstrated. These include but are not limited to thoracentesis and arterial blood gases.
   (b) The fellow will be expected to perform procedures that are expected of a fellow-level trainee including but not limited to, bronchoscopy and chest tube placement.

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) Small group discussions between the fellow(s) and the supervising physician will be held regularly to discuss occupational pulmonary medicine topics. Topics will be chosen by consensus between the fellow(s) and faculty in advance and independent evaluation of the literature by the fellow prior to the small group discussions is expected.
   3) 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 verbal feedback on a regular basis, at least weekly, on what the fellow has done well and what could be improved.
   2) Fellow and supervising physician will review these goals and objectives at the beginning of the rotation.
   3) Fellow and supervising physician will meet in order to provide verbal, preferably face-to-face feedback at the completion of the rotation. This verbal feedback may be given by phone but the attending physician is required to provide a written evaluation of the fellow and attest that they have discussed this with the fellow. If the feedback was not face-to-face, the evaluation will be transmitted electronically to the fellow.

D) Didactic Sessions

   1) The fellow assigned to this service will attend all scheduled fellow conferences. These are held each noon Tuesday and Wednesday in the Rennard Conference Room, SwH 4009 throughout the year and include Fridays during July and August.
Journal Club and Research Conference are held in DRC 1004 on Thursdays from September through June.

2) Attend all Internal Medicine Conferences that do not conflict with Section Conferences. Internal Medicine Grand Rounds is held on Friday at noon, September through June, in the Durham Research Center Auditorium.

3) The fellow will attend the didactic session on Occupational Medicine presented to the students and residents on the Pulmonary Rotation.

4) The fellow will attend a lecture given by David Poppert on Risk Management. More information may be found at this link: http://www.unmc.edu/intmed/pulm/739_occmed.htm

5) The fellow should prepare a case conference based on one of the archived cases reviewed as per section III, A, 1, b, iii above

E) Self-Learning

1) Review literature appropriate to evaluation of patients with suspected occupational or environmental exposures.

2) List the Hill Criteria of Causality and read the seminal papers. The Hill Criteria are:
   (a) Strength of association
   (b) Consistency
   (c) Specificity
   (d) Temporality
   (e) Biologic gradient
   (f) Coherence
   (g) Experiment
   (h) Analogy
   The criteria are outlined in the following essay by Dr. Hill: http://www.edwardtufte.com/tufte/hill

3) 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.

4) Complete the reading assignments in the ATS reading list for Occupational and Environmental Medicine as outlined below.

IV) Responsibilities

A) All Fellows assigned to the Service

1) These guidelines for the Nebraska Medical Center Occupational Pulmonary 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.
   (a) For each patient seen, the fellow will prepare a diagnostic and management plan and discuss this with the supervising physician.
   (b) The fellow will evaluate each patient to determine the need for specialized testing and learn the indications for involvement of the pulmonary disease specialist in the care of the patient.

3) The fellow will meet with the supervising physician prior to the start of the rotation to review expectations, create a schedule of didactic or small group activities and review times for clinical activities

4) Provide education to any residents or students who may be assigned to the service.
5) Complete an evaluation of the rotation and the attending.
6) Take call as scheduled.

B) First Year Fellows
1) At the end of this rotation the fellow should be expected to:
   (a) Demonstrate a solid fund of environmental and occupational pulmonary medicine knowledge.
   (b) Exhibit sound clinical judgment in regards environmental and occupational pulmonary medicine problems.
   (c) Be able to elicit a complete history of present illness and past medical history in regards to pulmonary presentations, including occupational exposures.
   (d) Perform a complete physical examination of the respiratory system, including the upper airway.
   (e) Document a complete Independent Medical Exam including:
      (i) an appropriate history and physical examination
      (ii) interpretation of data related to the occupational medicine patient
      (iii) determining appropriate diagnostic and management plans, weighing alternatives, benefits and risks of diagnostic and therapeutic options
   (f) Present findings of the Independent Medical Exam to the supervising physician in an appropriate manner
   (g) Competencies in choosing an appropriate oxygen delivery device, such as nasal cannula, venturi mask, non-rebreather mask, high flow oxygen systems, and knowledge of the ambulatory sources of oxygen, such as the C, D, and E cylinders, as well as the M-6 cylinder.
   (h) Familiarity with the various respiratory therapy techniques, such as bronchial hygiene, and volume expansion therapies.
   (i) Competency in interpretation of pulmonary function tests, including spirometry, flow volume loops, lung volumes defusing capacity, arterial blood gas analysis, and exercise studies.
   (j) Competency at interpreting chest roentgenograms and chest CT scans.
   (k) Competency in arterial puncture and blood sampling.

C) Second Year Fellows
1) Second year fellows may complete one month of this rotation.
2) May take overnight or weekend call on this rotation
3) Performance should reflect completion of the first year of fellowship
   (a) Competencies listed for first year fellows should be solid

D) Third Year Fellows
1) Third year fellows may take overnight or weekend call on this rotation.
2) The fellow will:
   (a) Demonstrate a solid fund of pulmonary disease knowledge.
   (b) Exhibit sound clinical judgment in regards to pulmonary problems.
   (c) Demonstrate competency in all pulmonary procedures.

E) Supervising Physician
1) These guidelines for the Nebraska Medical Center Occupational Pulmonary rotation will be made available to the supervising physician and any expectations by the supervising physician not specifically expressed in this document must be reviewed with the fellow at the start of the rotation.
2) Supervise procedures performed by the fellow.
3) Provide education to the fellow in the form of a one on one session at least one time per week.
4) The supervising physician will provide experiential learning, role-modeling, and one-on-one teaching to the fellow
5) Complete a written evaluation of the fellow, review it verbally with the fellow, check the attestation box and electronically sign the form.
6) Discuss the evaluation and management of all patients with the fellow.

F) Rotation

1) Clinic Responsibility
   (a) Attend each assigned clinic unless excused.
   (b) Be in the clinic at the assigned start time and remain until excused by the supervising physician or by 11:45, whichever comes first, in order to attend noon conference on the days it is being held.

2) On Call Responsibility
   (a) Take after hours call as assigned by the Program Director. Call may be altered by mutual agreement with the supervising physician

3) Vacation
   (a) Vacation time may be taken during this rotation with approval of the supervising physician.
   (b) Emergency leave may be requested after discussion with the program director.

V) Methods of Evaluation

A) Focused Observation and Evaluation
   1) The supervising physician should give immediate feedback if necessary and a formal verbal evaluation should be given at the mid-point of the rotation to review performance and suggest improvements.

B) Clinical Performance Ratings
   1) Each supervising physician must prepare a written evaluation of the fellow at the conclusion of their rotation. This evaluation will assess each of the competencies as listed in the educational objectives above.
   2) The supervising physician must also provide verbal feedback at the conclusion of the rotation either in person or by phone and will sign an attestation that this verbal interaction has occurred.

C) 360 degree Assessment
1) Evaluations may be sent to health care professionals in the clinic, who interact with the fellow. These evaluations will focus on the fellow’s professionalism and interpersonal and communication skills.

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; these will be sent through New Innovations.
2) He/she should complete an evaluation, available in New Innovations, of the instruction undertaken by the supervising physician(s) during the rotation.

VI) Readings will be provided periodically on the following topics:

A) This list is available on the ATS Reading List at the following link: http://www.thoracic.org/education/career-development/residents/ats-reading-list/index.php

B) Occupational and Environmental Readings may be found at the following link: http://www.thoracic.org/education/career-development/residents/ats-reading-list/occupational-and-environmental-medicine.php