Elective Rotation

The rotation in occupational medicine is a two (2) week or four (4) week experience structured to develop the student’s decision-making cognitive skills and apply didactic material in a clinical setting. Upon completion of the rotation, the student should be able to elicit an occupationally specific medical history; perform a work-related physical examination; obtain appropriate laboratory studies; assess the results; develop a diagnosis; formulate a management plan; and assist in implementation of appropriate therapy for common occupational medical problems. The student should also develop fundamental psychomotor skills by performing routine basic procedures in a supervised setting.

Purpose

Clinical experiences are intended to assist the student’s transition from didactics to integrated clinical evaluation, decision-making, and management of patients with medical problems. In addition to gaining specific skills during this rotation, the student should also develop skill in systematic medical problem solving and patient management abilities, establish or reinforce patterns of independent learning and self-evaluation, and improve skills in communication and medical record keeping.

At the completion of this rotation, the student should have reached certain broad goals, including:

- improved basic skills in physical diagnosis;
- familiarity with ancillary diagnostic procedures (e.g. radiographic, endoscopy, etc.);
- an understanding of indications for appropriate laboratory and diagnostic tests.

Students are expected to assist in the management of patients’ problems, under supervision. The student should also develop fundamental psychomotor skills by performing routine basic procedures under direct supervision.

Further, the student should be able to experience the basics in clinical occupational medical principles.

Objectives

We recognize that four weeks is insufficient time to cover a comprehensive list of objectives. Clearly, subjects addressed in any clinical rotation are dependent on the number of patients and kinds of disease entities presenting to a particular service. Nevertheless, certain minimum content in occupational medicine must be addressed, whether by clinical exposure or by didactic materials so that students are prepared for Board examinations and entry into residency training programs. Therefore, the following sections contain relatively broad, basic objectives for which students are responsible.

Basic Psychomotor Objectives

At the completion of the occupational medicine rotation, the student should be able to:

1. Perform and record an appropriate history through the comprehensive collection of basic, relevant facts, by systems, in logical order, legibly and systematically, using accepted terminology.
2. Perform and record an appropriate physical examination of all systems at a sufficient level of complexity, using all methods (inspection, palpation, percussion, auscultation including attention to the structural examination. The data will be recorded systematically, legibly, and in acceptable terminology.
3. Formulate, record and use a problem list.
4. Make rational use of information, including the ability to:
a. integrate material from the history and physical to establish a differential diagnosis
b. sequence findings
c. prioritize
d. synthesize
e. revise

5. Develop realistic diagnostic and management plans.

6. Utilize laboratory tests and studies, including:
   a. Being familiar with (knowing indications and contraindications for):
      • basic medical surveillance testing: ECG, Audiogram, PFT, Vision Screening, etc.
      • basic laboratory surveillance screening
      • x-ray: chest, musculoskeletal
   b. Order x-rays appropriately
   c. Order and interpret results of:
      • audiogram
      • blood sugar
      • BUN
      • chest x-ray
      • complete blood count and electrolytes
      • creatinine
      • liver profile
      • PFT
      • urinalysis
   d. Order, perform, and interpret the following procedures:
      • blood pressure
      • electrocardiogram
      • tuberculosis skin test
      • visual acuity

7. Correctly use the following instruments:
   a. Hammer
   b. Ophthalmoscope
   c. Otoscope
   d. Sphygmomanometer
   e. Stethoscope
   f. Tongue depressor
   g. Tuning fork

8. Perform with assistance:
   a. injection (intradermal, subcutaneous, intramuscular, intravenous)
   b. immobilization of extremity sprains and fractures
   c. phlebotomy
   d. repair of simple lacerations


10. Individualize the treatment plan for the unique patient.

11. Initiate treatment with supervision.

12. Request appropriate consultation.

13. Reassess and adjust therapeutic plans.


17. Recognize and initiate management in emergency cases including:
   a. cardiac arrest/MI
   b. fracture
   c. hemorrhage/bleeding
   d. psychiatric emergency
   e. acute respiratory distress
   f. seizure
   g. shock
   h. syncope
Basic Cognitive Objectives

To help the student meet the general objectives, the student will review the specific objectives for each of the following diseases or disorders. For each the student should be able to:

- understand the clinical presentation
- understand the incidence, etiology, and pathophysiology
- list available therapeutic methods and specify risks, appropriate costs, and side effects of each
- understand the natural course of the disease and the prognosis with any of the available therapeutic methods

Diseases and Disorders:

1. Cardiovascular
   - acute myocardial infarction
   - congestive heart failure
   - angina pectoris
   - cardiac dysrhythmias
   - syncope

2. Chemical Intoxication
   - lead
   - mercury
   - metal fume fever
   - other

3. Dermatology
   - contact dermatitis
   - allergic dermatitis
   - atopic dermatitis
   - eczema
   - fungal dermatitis

4. Endocrinology
   - diabetes mellitus and its acute and chronic complications

5. Hematology/Oncology
   - anemia (B12, folic acid, iron deficiency, chronic disease
   - disorders of coagulation
   - cancer: occupationally induced/associated

6. Infectious Diseases
   - hepatitis
   - tuberculosis

7. Neuromuscular/Skeletal
   - carpal tunnel syndrome
   - herniated disc
   - simple joint sprain
   - acute neurovascular event
   - seizures
   - simple contusion
   - somatic dysfunction
   - syncope

8. Respiratory
   - acute bronchitis
   - atelectasis
   - chronic obstructive pulmonary disease (emphysema, chronic bronchitis, asthma
   - pneumonia
• pneumothorax
• tobacco addiction
• tuberculosis

9. Substance Abuse
• alcohol
• prescription drugs
• tobacco
• other

Implementation and Evaluation

Course objectives are to be accomplished in a College affiliated hospital or clinical facility, under supervision. Basic objectives must be covered during the rotation to assure adequate student preparation for Board examinations and other evaluations such as post-rotation examinations. The use of diverse methods appropriate to the individual and the clinical site are encouraged, but patient-centered teaching is optimal.

Didactic methods to achieve required objectives include:
- reading assignments
- lectures
- computer-assisted programs (if available)
- student attendance at/participation in formal clinical presentations by medical faculty

Clinically oriented teaching methods may include:
- assignment of limited co-management responsibilities under supervision
- participation in clinic visits, daily patient rounds and conferences
- supervised and critiqued clinical work-ups of patients admitted to the service
- assigned, case-oriented reading case presentations

Three levels of achievement are identified:
- familiarity with a variety of medical procedures through observation and assisting
- proficiency in clinical procedures through actual supervised performance
- awareness of the availability of various medical procedures and their use

Evaluations of students should be completed on the E*Value on-line system within one week from completion of the rotation. On the last day of service, the supervising physician should review the student’s performance with the student. A student’s signature simply indicates that the student has received a grade directly from the attending; it does not indicate agreement with the grade received.

Texts and Resources

Required Reference Texts
McCunney, RJ, A practical Approach to Occupational and Environmental Medicine, 3rd Ed., Lippincott Williams, Wilkens, 2003

Additional Helpful Reading Resources
29 Code of Federal Regulations 1910 and 1920, Occupational Safety and Health, can be accessed on Occupational Safety and Health Administration (OSHA) website

National Institute of Occupational Safety and Health (NIOSH) website

American College of Occupational and Environmental Medicine (ACOEM) website
