ELECTIVE / SELECTIVE ROTATION

This rotation is a two (2) week experience structured to develop the student's decision-making cognitive skills and apply didactic material in a clinical setting as well as introduce them to the radiological procedures available for patient evaluation and treatment. Upon completion of the rotation, the student should be able to scan an x-ray film for the key diagnostic x-ray findings and use these findings to arrive at the most likely diagnosis. The student should be able to demonstrate knowledge of the use of the resources of the radiology department in an appropriate and cost effective way to solve common clinical problems. Most students electing this rotation will be in their third year of medical school; however some may be in their fourth year. Post-rotation examination is not required.

PURPOSE

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

OBJECTIVES

We recognize that two weeks is an insufficient time to cover this comprehensive list of objectives. Clearly, subjects addressed in any clinical rotation are dependent on the numbers of patients and kinds of disease entities presenting to a particular service. Nevertheless, certain minimum content must be addressed, either by clinical exposure or by didactic materials so that students are prepared for Board examinations and other testing. Therefore, the following sections contain relatively broad, basic objectives for which students are responsible.

AFFECTIVE

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

1. Understand the role of the radiologist on the health care team and the relationship of radiology to other clinical disciplines.
2. Develop an appreciation of the radiologist's needs for adequate clinical history and a clear statement of indications for examinations being requested.

BASIC PSYCHOMOTOR OBJECTIVES

The student should demonstrate development and expansion of competence in performing the following skills:

1. Demonstrate and discuss the appropriate and judicious ordering of various radiologic examinations.
2. Demonstrate a basic understanding of the investigative approach for interpretations of examinations.
3. Demonstrate a thorough understanding of methods, indications, and contraindications for commonly ordered radiologic examinations.
4. Demonstrate knowledge of the use of the radiology department as an appropriate and cost effective way to solve common clinical problems.
5. Demonstrate ability to interpret (appropriate to the level of training) the more common examinations.
6. Demonstrate knowledge of the proper sequence of procedures to evaluation for specific clinical problems.
7. Demonstrate and discuss radiation safety including radiation biology, dosimetry, exposure
limits, radiation protection and waste disposal.

8. Demonstrate familiarity with the tracer concept and its application to the evaluation of both pathophysiological processes.

9. Describe/discuss the many procedures of interventional radiology, and how they complement traditional surgical options.

The student should be able to perform the following, with staff supervision:

1. Interpret radiographic studies commonly seen by nonradiologists, specifically chest, spine, extremity, and abdomen radiographs.
2. Identify pulmonary edema, pneumonia, and malignancy on chest radiographic examinations.
3. Synthesize data and approach radiological problems in a logical manner.
4. Correlate clinical presentations with radiological findings.

Basic Cognitive Objectives

For each of the following core examinations/procedures, the student should be able to apply osteopathic principles and practices to:

1. Describe the basics of the procedure and technique.
2. Describe its capabilities and limitations.
3. Describe and explain what is required from the patient.
4. Be familiar with the indications for and complications of the examination/procedure.
5. Describe the basic approach to interpreting the results.

Core Examinations/Procedures:

1. Plain Films: Skull
2. Plain Films: Spine
3. Plain Films: Extremity
4. Plain Films: Chest
5. Plain Films: Abdomen/Pelvis
6. Contrast Studies: Upper Gastrointestinal/small bowel
7. Contrast Studies: Barium Enema
8. Contrast Studies: Intravenous Pyelogram
9. Computed Tomography
   a. head and neck
   b. abdomen/pelvis
   c. chest
   d. spine
   e. extremities
10. Ultrasound
    a. abdomen
    b. pelvis
    c. carotid arteries of the neck
    d. other superficial organs (thyroid)
    e. peripheral vascular
    f. testicular
11. Angiograms
    a. neuro-angiography
    b. peripheral visceral angiography
    c. angioplasty
12. Magnetic Resonance Imaging
    a. head & neck
    b. neck
    c. abdomen/pelvis
    d. spine
    e. musculoskeletal
    f. vascular – MRA/MRV
13. Nuclear Medicine
    a. gall bladder
    b. bone scan
    c. thyroid
    d. parathyroid
e. cardiac (if applicable to department)
f. tumor specific scans

15. Mammography

16. Interventional Studies/Procedures
   a. percutaneous biliary drainage
   b. percutaneous abscess drainage
   c. percutaneous transluminal angioplasty
   d. percutaneous biopsy
   e. percutaneous nephrostomy with stone removal
   f. percutaneous cholecystostomy
   g. epidural
   h. discograms
   i. facial nerve blocks

**Implementation**

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 readings

Three levels of achievement are identified:

- familiarity with a variety of radiological procedures through observation and assisting
- proficiency in common radiological procedures through actual supervised performance
- awareness of the availability of various radiological procedures and their use in diagnosis/therapy

At the beginning of the rotation, the physician/mentor should review expectations/guidelines of performance with the student. On the last day of service, the supervising physician should review the student’s performance with the student and have the student sign the evaluation form before submission. 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. Evaluations of students must be completed within one week of completion of the rotation.

**Texts and Resources**

**Required Assignment Text**

**Additional Helpful Reading Resources**

**Assignments**
The rotation director or preceptor will direct specific and general reading assignments from texts and current literature. Supplemental readings from current periodical literature are recommended.