CURRICULUM NAME: **RADIOLOGY**

Overview

Radiology should provide the resident with knowledge and skill in choosing which imaging studies will best answer their clinical questions, skill in working with the radiologist as a consulting colleague, and the opportunity to develop competencies in the initial interpretation of common imaging studies.

I. Objectives

A. The resident should:

1. Know the normal anatomy of the body area or organ structures under study.

2. Identify and correlate the radiographic features with the underlying anatomy of the area under study.
   e.g.: The resident should know the contents of the right pulmonary hilum and be able to idenfify where the right pulmonary artery is located on the CXR.

B. For a given radiographic imaging study, the resident should be able to:

1. Identify common undifferentiated radiological problems or unknowns.

   e.g.: Anterior mediastinal mass on CXR; interstitial infiltrates on CXR small bowel gas on KUB; obliteration of the ilio-psoas shadow on KUB; (See appendix I)

2. Construct a relevant differential diagnosis given the clinical picture (history, physical exam, labs) and given other suggestive or associated radiographic features on the imaging study.

   e.g.: For an enlarged right hilum on CXR, what would be the differential diagnosis for an elderly nursing home patient with hemoptysis and a significant smoking history and who has bullae on CXR?
   e.g.: For an anterior mediastinal mass, what would be the differential for a 28 year old man versus a 68 year old man?

C. The resident should be able to identify the presence or absence of supportive radiographic features or hallmarks of the known disease or illness on the imaging study for patients with clinically known conditions and defined illnesses or diseases. (See appendix II)

II. Content: Imaging Studies

A. The Thorax: CXR and CT thorax
B. Cervical spine and lumbosacral spine films, CT spine
C. Skull films, sinus films, CT head
D. The Abdomen: KUB, Obstructive series, CT abdomen, US abdomen
E. The Pelvis: Pelvic film, CT pelvis, US pelvis
F. Urological Studies: IVP, renal ultrasound
G. Joint Films: Shoulder, hands, hips, knees, feet
H. Basic Nuclear Scans
I. MRI/MRA

III. Methods

A. Throughout the three year residency program, the resident can accomplish the objectives outlined above during radiology electives, subspecialty electives, ward & ICU months, ambulatory rotations and case study conferences.

B. The resident may initially study a film without supportive clinical data, then review the clinical data, and re-look at the study so as to refine his/her radiographic interpretive skills.

C. For all clinical situations, the resident should do a clinical correlation with all radiographic imaging studies. Radiographic findings should be correlated with clinical data from the patient history, physical exam, labs, and other studies.

D. Consultations with the appropriate subspecialty attendings and radiology attendings.

E. During radiology elective rotations, the resident should observe various radiological procedures so as to become familiar with the preparation for the procedure by the patient and the radiology department as well as the performance of the procedure itself. This will enhance the clinician's understanding of the test's value and limitations.

IV. Evaluation: Please see general introduction

V. Radiology Elective

In addition to the contact with radiology which residents will have in their day to day care of both ambulatory and hospitalized patients, and in medical conferences of different types, they may elect rotations of 1, 2 or 4 weeks. During these rotations, the resident will choose and complete a project that will serve as an illustrative example of the resident's accomplishments in reaching some of the objectives outlined in I. The resident can put together any of the following projects:

A. Four case teaching conference
B. Teaching file
C. Curriculum writing for various imaging studies (see Appendices I & II for examples)
D. Clinical correlation exercises
E. Annotated bibliography

CURRICULUM: RADIOLOGY

APPENDIX I

CXR

The resident should be able to identify, elucidate the underlying pathophysiology, and provide a differential diagnosis for these common radiographic problems or unknowns:

1. Localization problems
   e.g.: lobar, segmental, pleural space, mediastinum, soft tissues
2. Density - identification as:
   - infiltrate
   - loculated pleural effusion
   - atelectasis
   - pneumothorax
   - subdiaphragmatic process
3. Interstitial vs alveolar infiltrates
4. Increased CT ratio
5. Abnormal cardiac silhouette
6. Widened mediastinum
7. Enlarged hilum
8. Mediastinal mass - anterior, superior, posterior
9. Abnormal soft tissues or bony structures in neck or thorax
10. Pleural effusion
11. Signs of diseases of the diaphragm and subdiaphragmatic region:
    e.g.: pleural thickening, diaphragmatic calcification
12. Elevated hemidiaphragm
13. Loss of lung volume
14. Other

CURRICULUM: RADIOLOGY

APPENDIX II

The Chest

The resident should be able to identify the hallmarks or suggestive features from CXR or CT chest or other appropriate studies that support the following clinical conditions:

1. Pneumonias
2. Airway diseases:
    - Asthma
    - COPD
    - Bronchiectasis
    - Pneumatocele
    - Pneumomediastinum
3. Pulmonary TB
4. Mycotic diseases
5. Interstitial Lung Diseases including those of occupational, chemical, physical origins and other
6. Circulatory disturbances
    - Pulmonary edema
    - ARDS
    - Pulmonary Thromboembolus
    - Pulmonary Hypertension
7. Tumors of the Lung and Bronchi
8. Disease of the Pleura, Mediastinum, and Diaphragm
9. The Cardiovascular System
    - CHF
    - Acquired valvular diseases
    - Coarctation of the aorta
    - Aortic Aneurysm
    - Hypertensive heart disease
    - Coronary artery disease
    - Ventricular aneurysm
    - Cardiomyopathies-congestive, constrictive, obstructive
    - Pericardial Diseases
    - Cardiac Pacemakers