I. **Educational Purpose and Goals:** Internists must have the opportunity to enhance and improve their understanding of the radiological aspect of medicine. The purpose of this rotation is to familiarize the resident to common radiological investigational modalities as well as expose them to the advanced imaging in this field. The emphasis is also on training the residents to correctly and logically approach common radiological presentations and generate radiological differential diagnoses. They are expected to learn the appropriate indications and basic interpretation of various radiological tests.

II. **Principal Teaching Methods:**
   a. Residents will observe in the radiology department at either Medical Center Hospital (MCH) or Midland Memorial Hospital (MMH) for a 2-week period. Teaching Attending Rounds are integrated with the management rounds and occur for a minimum of 4.5 hours per week.
   b. Residents will analyze plain film Conventional Radiology (CR) images, Ultrasonograms, Computed Tomography (CT) scans and Magnetic Resonance Imaging (MRI) images. The tests shall be supervised and interpreted by the attending radiologist with the observing resident. Teaching Rounds will occur during these interpretations.
   c. Residents will also be exposed to a wide variety of radiographic images and taught nuances of radiology.

III. **Educational Content:**
   a. Mix of diseases: The disease mix includes all patients, including inpatient and outpatient, who are undergoing radiological testing.
   b. Patient characteristics: Radiology cases will include predominantly inpatient imaging from MCH or MMH but may also include outpatient imaging read by radiologists at MCH or MMH. The demographic and ethnic mix approximates that of the Greater Midland/Odessa community. MCH and MMH serve numerous rural populations in West Texas. The extensive socioeconomic diversity of West Texas supports a stimulating training experience with broad diagnostic challenges.
   c. Learning venues: MCH and MMH serve as regional referral centers for West Texas and New Mexico.
   d. Procedures: The radiological tests and procedures available for observation and interpretation are listed below; however emphasis will be placed on interpreting Chest X-Rays and CT scans.
      i. Chest X-Rays
      ii. Computed Tomography
      iii. Magnetic Resonance Imaging
      iv. Ultrasonography
      v. Mammography
      vi. Nuclear Imaging
vii. Interventional Radiology Procedures

e. Ancillary services interacted with may include: subspecialist and primary care community physicians, residents from Family Medicine and Obstetrics/Gynecology of disciplines at Texas Tech, nursing staff, and technicians.

f. Duration: The rotation is intended for a 2-week block

g. Structure of the rotation: Resident training may extend between 8 AM and 5 PM but overall resident work hours may not exceed 80 hours/week. There will be no in-hospital overnight call. The resident will continue to attend their mandatory afternoon continuity care clinics, primary care conferences, and didactic sessions and Medicine Grand rounds during the rotation. Residents will experience educational interactions with the supervising attending physician. Minimum expectations for workload account for expected time for resident.

IV. **Principal Ancillary Educational Materials:**

a. At the beginning of each rotation, residents are expected to read the curriculum learning goals & objectives. These are available on the Internal Medicine website.

b. A reading list of articles from the current literature and textbooks are available at the Texas Tech library.

c. Full service 24-hour libraries are present at Texas Tech, with onsite medical librarians. Web-based searchable medical databases are available, and standard medical journals are available in both print and electronic formats. In addition, all residents have 24-hour access to the extensive online Texas Tech University electronic library, including databases and electronic journals.

d. List of suggested textbooks for reading:
   ii. *Clinical Radiology: The Essentials.* Richard H. Daffner

e. All resident can access the Up-to-Date database and text using their own personal subscription.

f. Selected topics and material provided by the instructor.

g. Computer-based resources are available at the hospitals to facilitate patient care, education and communication. The following are made available:
   i. Computer-assisted diagnosis and decision support
   ii. Drug information including side effect and drug-drug interactions
   iii. Electronic Medical Record internet accessibility
   iv. Electronic textbooks of medicine
   v. E-mail services
   vi. Internet access to medical sites on the World Wide Web
   vii. Laboratory and radiology results retrieval
   viii. Multimedia procedures training
   ix. Patient education materials.
V. **Methods of Evaluation:**
   a. Resident Performance: Residents will be oriented to the rotation expectations at the start of the block, and then will receive a formative midpoint feedback evaluation, followed by a formal summative written evaluation at the conclusion of the rotation. The supervising physician who evaluates the resident will elicit feedback from office staff and other professionals regarding the resident’s professionalism, communication, and efforts to learn the systems of the care venues. At the end of each rotation the faculty completes a written resident evaluation form. The evaluation is competency-based and assesses core competency performance. The evaluation is shared with the resident and sent to the residency office where it may be reviewed by the resident and is part of the resident file and incorporated as part of the semi-annual review for directed resident feedback.

   b. Program and Faculty Performance: Upon completion of the rotation, the residents will be asked to complete a service evaluation form commenting on the faculty, facilities, and service experience. These evaluations will be sent to the residency office for review and the attending faculty physician will receive anonymous quarterly copies of completed evaluation forms. The Training and Evaluation Committee will review results annually.

VI. **Rotation Specific Competency Objectives:**
   a. Clinical Care: By the end of the rotation, the resident must be able to demonstrate a logical approach in the analysis of basic diagnostic radiological findings on plain film CR exams, have basic knowledge of interpretation of more advanced diagnostic imaging modalities, and form a differential diagnosis based on radiological findings. The residents must be able to demonstrate ability in using radiological technology to support decisions, procedures, prevention and patient-focused care.

   b. Medical Knowledge: By completion of the rotation, the resident must be able to:
      i. Identify indications for appropriate individual radiological investigations.
      ii. Residents will develop satisfactory skill and competence in basic interpretation of plain film CR exams and some exposure to interpretation of more advanced imagining procedures such as CT and MRI scans.

   c. Interpersonal and Communication Skills:
      i. Residents will productively and cooperatively participate in Multidisciplinary Treatment Planning.
      ii. Residents will actively work with the radiology support staff and demonstrate the ability to work well in a team setting.
      iii. The resident will create and sustain a therapeutic and ethically sound relationship with patients and their families.
      iv. The resident will demonstrate the ability to communicate effectively and demonstrate caring, compassionate, and respectful behavior in all patient encounters.

   d. Professionalism: Residents will demonstrate respect, compassion and integrity. They will be committed to excellence and continuous professional development.
e  Practice Based Learning and Improvement  
  i. The resident will be able to locate, critically appraise, and assimilate evidence from 
      scientific studies and apply it to patients’ health problems.  
  ii. Residents will learn to use information technology to manage information, access 
      on-line medical resources, and support self-education, patient care decisions and 
      patient education.  

f  Systems-Based Practice  
  i. Residents will be able to practice cost-effective health care and resource allocation 
     while advocating for quality.  
  ii. They will be able to recognize costs of outpatient radiology testing and be able to 
     use the most cost-effective therapy on an individual basis.