

LEARNING OBJECTIVES: EL RADIOLOGY & BIOMEDICAL IMAGING DIAGNOSTIC RADIOLOGY
CLINICAL ELECTIVE

Overarching Goals of Curriculum	Elective objectives: By the end of the rotation, students will be expected to:	Where/how taught	Taught by	How student's achievement of objective is assessed	How feedback is given	Quantity target
1, 2, 3, 4, 5, 6	1. History skills: Gather the important information that is needed for the interpretation of the requested imaging studies. This information can be obtained for the electronic medical record.	YNHH	Fellows and Residents	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
1, 2, 3, 4, 5, 6, 7, 8	2. Knowledge/diagnostic and treatment skills: Know about common radiographic conditions and how they relate to common clinical scenarios.	YNHH	Attendings, Residents and Fellows	Direct Evaluation of Radiographic Examinations	Immediate Verbal Feedback, Written feedback at end of rotation	50 Patients
4	3. Procedural skills: The student should know the appropriate indications for various diagnostic-imaging procedures.	YNHH	Attendings, Residents and Fellows	Direct Evaluation	Immediate Verbal Feedback, Written feedback at end of rotation	50 Patients
4, 5, 6	4. Attitude: Demonstrate professional responsibility in working as a team member with other members of the Radiology service, support staff and referring clinicians.	YNHH	Attendings, Residents and Fellows	Direct Evaluation	Immediate Verbal Feedback, Written feedback at end of rotation	N/A
5, 6, 8	5. Career/context: Know the training/career pathway for Radiology.	YNHH	Attendings, Residents and Fellows	Small group discussion	Immediate verbal feedback	N/A

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	Define terms commonly used in radiology reports including: lucency, opacity, attenuation and categorize different attenuations on x-ray including: bone, soft tissue, air, metal, and fat.	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Compare different radiologic modalities including: Plain film, CT, Ultrasound, MR, Nuclear medicine	YNHH	Attendings, Residents and Fellows	Direct Evaluation of Radiographic Examinations	Immediate Verbal Feedback, Written feedback at end of rotation	50 Patients

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	Describe the procedure for ordering a radiologic exam and the associated indications.	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Predict types of critical imaging findings radiologic report and the Veriphy procedures.	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	List risks associated with radiation exposure and the different "at risk" populations as well as the "ALARA" principle.	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Distinguish between the different types of contrast used in imaging exams and the potential diagnostic benefits	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Employ a systematic search approach for interpreting chest x-rays and the locations of the different lobes of the lungs on both the PA and lateral projections.	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	50 Patients
	List different types of pathologies that can produce an "opacity" on chest x-ray and differentiate between airspace and interstitial opacities on CXR and formulate a differential diagnosis for each appearance	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Describe signs of a pneumothorax at CXR (2) Differentiate between pulmonary vascular congestion, interstitial pulmonary edema, and alveolar edema on CXR (3)	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Use a systematic search pattern for interpreting an abdominal plain film (3)	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	50 Patients
	Describe what a patient experiences during a gastrointestinal fluoroscopic procedure	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Recognize free intra-abdominal air on plain film and describe how patient positioning may affect sensitivity for its detection	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day

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	Differentiate between dilated small bowel and large bowel on plain film (4)	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day
	Describe clinical indications for different barium studies (Barium swallow, esophagram, upper GI examination, small bowel follow through, barium and hypaque enemas) and what patients experience during these examinations	YNHH	Attendings, Residents and Fellows	Direct Evaluation of History Presentation	Immediate Verbal Feedback	5-10 Patients per day

Helpful Websites for Learning

<http://medicine.yale.edu/diagnosticradiology/education/anatomypresentations.aspx>

<http://www.med-ed.virginia.edu/courses/rad/>

<http://www.learningradiology.com/>

<http://eradiology.bidmc.harvard.edu/>