

Abdominal Imaging (First Year, First Block)

This rotation involves interpretation of plain film, CT and MR studies of the abdomen and pelvis, medical knowledge component of CT-guided biopsies, CT angiography and 3D imaging in the hospital setting. Abdominal Imaging studies includes both GI and GU subject matter. This rotation also involves performance and interpretation of post-processed cross-sectional imaging, including multi-planar reconstructions, maximum intensity projections, curved planar reformations, 3D volume renderings and other specialized reformatting of primarily of non-neurological CT and MR examinations.

Patient Care

Goal

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:

- (1) Learn to direct plain film and CT studies in most patients understanding CT scanning protocols and contrast media usage well,
- (2) Recognize the findings of life-threatening conditions and respond urgently,
- (3) Discuss the classification, symptoms, and signs of contrast reactions and the clinical management including appropriate use of pharmacologic agents and their mode of administration and doses,
- (4) Understand the pre-medication regimen for contrast sensitive patients including drugs, doses, and dose scheduling, and
- (5) Learn CT-guided biopsy indications and contraindications for the abdomen.
- (6) Investigate history & clinical indication for body MR studies in most patients, become familiar with MR scanning protocols & concepts as well as the use of contrast media.
- (7) Describe patient risk factors for Nephrogenic Systemic Fibrosis (NSF) and understand the Interim LSU Public Hospital Department of Radiology Policy for gadolinium contrast administration in patients with renal disease.

Skill Objectives:

- (1) Provide emergency treatment for adverse reactions to intravenous contrast material,
- (2) Become facile with PACS and utilize available technical and written information sources to manage patient information, and
- (3) Coordinate activities in the reading room, including providing direction for the technologists, consultation for other clinicians, and answering the phone.
- (4) CT guided biopsy procedures may be performed on either this rotation or the Vascular Interventional Radiology rotation.
- (5) Protocol basic plain film, CT and MR studies of the abdomen and pelvis, cognizant of contraindications.
- (6) Assess and manage quality control of plain film, CT and MR studies of the abdomen and pelvis.

Behavior and Attitude Objectives:

- (1) Work with the health care team in a professional manner to provide patient-centered care, and
- (2) Apply ACR communication guidelines and notify referring clinician for urgent, emergent, or unexpected findings, and document in dictation.

(3) Work closely with assigned faculty member to complete the daily workload of plain films, CTs and MRIs of the abdomen and pelvis. Any critical or reportable finding should be reported to the originating service and properly documented.

Medical Knowledge

Goal

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:

- (1) Discuss CT technology and its application, including dosimetry,
- (2) Learn MR physics and pertinent concepts for image interpretation of common studies such as the liver, the kidneys, pancreas, and female pelvis,
- (3) Identify relevant anatomic structures on CT and MR images of the abdomen and pelvis, and
- (4) Diagnose more common pathologic conditions in the abdomen and pelvis and understand their pathophysiology.

Skill Objectives:

- (1) Accurately interpret basic CTs of the abdomen and pelvis,
- (2) Perform and interpret basic post-processing (3D) images, and
- (3) Learn the approach to MR image interpretation for all but the most complex MRs of the abdomen and pelvis. MRI dictation should be undertaken.

Behavior and Attitude Objectives:

- (1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice-Based Learning and Improvement

Goal

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:

- (1) Assess CT and MR images for quality and suggest methods of improvement, and
- (2) Understand the role of MRI relative to other abdominal imaging methods such as CT in the evaluation of specific diseases and among varied patient populations.

Skill Objectives:

- (1) Incorporate on-line just-in-time learning at the workstation on a daily basis. For example ARRS Goldminer; MyPACS.net;
- (2) Demonstrate independent self-study using various resources including texts, journals, teaching files, and other resources on the internet, and
- (3) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:

- (1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
- (2) Follow-up interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal

Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:

- (1) Understand how their image interpretation affects patient care.

Skill Objectives:

- (1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay, and
- (2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
- (3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:

- (1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Knowledge Objectives:

- (1) Understanding of the need for respect for patient privacy and autonomy, and
- (2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:

- (1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:

- (1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Knowledge Objectives:

- (1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:

- (1) Generate reports on most examinations with appropriate structure, content, accuracy and timeliness,
- (2) Communicate effectively with physicians, other health professionals, and
- (3) Obtain informed consent with the utmost professionalism.

Behavior and Attitude Objectives:

- (1) Work effectively as a member of the patient care team.

Abdominal Imaging (Second Year, Second Block)

This rotation involves interpretation of plain film, CT and MR studies of the abdomen and pelvis, CT angiography and 3D imaging. This rotation involves a more active role in protocoling and quality control of abdominal and pelvic plain films, CTs and MRs. This rotation also involves performance and interpretation of post-processed cross-sectional imaging, including multi-planar reconstructions, maximum intensity projections, curved planar reformations, 3D volume renderings and other specialized reformatting of primarily of non-neurological CT and MR examinations.

Patient Care

Goal

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:

- (1) Learn to direct plain film and CT studies in most patients understanding CT scanning protocols and contrast media usage well,
- (2) Recognize the findings of life-threatening conditions and respond urgently,
- (3) Discuss the classification, symptoms, and signs of contrast reactions and the clinical management including appropriate use of pharmacologic agents and their mode of administration and doses,
- (4) Understand the pre-medication regimen for contrast sensitive patients including drugs, doses, and dose scheduling, and
- (5) Learn CT-guided biopsy indications and contraindications for the abdomen.
- (6) Investigate history & clinical indication for body MR studies in most patients, become familiar with MR scanning protocols & concepts as well as the use of contrast media.
- (7) Describe patient risk factors for Nephrogenic Systemic Fibrosis (NSF) and understand the Interim LSU Public Hospital Department of Radiology Policy for gadolinium contrast administration in patients with renal disease.

Skill Objectives:

- (1) Provide emergency treatment for adverse reactions to intravenous contrast material,
- (2) Become facile with PACS and utilize available technical and written information sources to manage patient information, and
- (3) Coordinate activities in the reading room, including providing direction for the technologists, consultation for other clinicians, and answering the phone.
- (4) CT guided biopsy procedures may be performed on either this rotation or the Vascular Interventional Radiology rotation.
- (5) Protocol basic plain film, CT and MR studies of the abdomen and pelvis, cognizant of contraindications.
- (6) Assess and manage quality control of plain film, CT and MR studies of the abdomen and pelvis.

Behavior and Attitude Objectives:

- (1) Work with the health care team in a professional manner to provide patient-centered care, and
- (2) Apply ACR communication guidelines and notify referring clinician for urgent, emergent, or unexpected findings, and document in dictation.

(3) Work closely with assigned faculty member to complete the daily workload of plain films, CTs and MRIs of the abdomen and pelvis. Any critical or reportable finding should be reported to the originating service and properly documented.

Medical Knowledge

Goal

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:

- (1) Discuss CT technology and its application, including dosimetry,
- (2) Learn MR physics and pertinent concepts for image interpretation of common studies such as the liver, the kidneys, pancreas, and female pelvis,
- (3) Identify relevant anatomic structures on CT and MR images of the abdomen and pelvis, and
- (4) Diagnose more common pathologic conditions in the abdomen and pelvis and understand their pathophysiology.

Skill Objectives:

- (1) Accurately interpret basic CTs of the abdomen and pelvis,
- (2) Perform and interpret basic post-processing (3D) images, and
- (3) Learn the approach to MR image interpretation for all but the most complex MRs of the abdomen and pelvis. MRI dictation should be undertaken.

Behavior and Attitude Objectives:

- (1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice-Based Learning and Improvement

Goal

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:

- (1) Assess CT and MR images for quality and suggest methods of improvement, and
- (2) Understand the role of MRI relative to other abdominal imaging methods such as CT in the evaluation of specific diseases and among varied patient populations.

Skill Objectives:

- (1) Incorporate on-line just-in-time learning at the workstation on a daily basis. For example ARRS Goldminer; MyPACS.net;
- (2) Demonstrate independent self-study using various resources including texts, journals, teaching files, and other resources on the internet, and
- (3) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:

- (1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
- (2) Follow-up interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal

Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:

- (1) Understand how their image interpretation affects patient care.

Skill Objectives:

- (1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay, and
- (2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
- (3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:

- (1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Knowledge Objectives:

- (1) Understanding of the need for respect for patient privacy and autonomy, and
- (2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:

- (1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:

- (1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Knowledge Objectives:

- (1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:

- (1) Generate reports on most examinations with appropriate structure, content, accuracy and timeliness,
- (2) Communicate effectively with physicians, other health professionals, and
- (3) Obtain informed consent with the utmost professionalism.

Behavior and Attitude Objectives:

- (1) Work effectively as a member of the patient care team.

Abdominal Imaging (Third Year and beyond, Third Block and Electives)

This rotation involves interpretation of plain film, CT and MR studies of the abdomen and pelvis, CT angiography and 3D imaging. By the end of this rotation, the residents will achieve competency in interpreting abdominal and pelvic plain films, CTs and MRs. This rotation also involves performance and interpretation of post-processed cross-sectional imaging, including multi-planar reconstructions, maximum intensity projections, curved planar reformations, 3D volume renderings and other specialized reformatting of primarily of non-neurological CT and MR examinations.

Patient Care

Goal

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:

- (1) Learn to direct plain film and CT studies in most patients understanding CT scanning protocols and contrast media usage well,
- (2) Recognize the findings of life-threatening conditions and respond urgently,
- (3) Discuss the classification, symptoms, and signs of contrast reactions and the clinical management including appropriate use of pharmacologic agents and their mode of administration and doses,
- (4) Understand the pre-medication regimen for contrast sensitive patients including drugs, doses, and dose scheduling, and
- (5) Learn CT-guided biopsy indications and contraindications for the abdomen.
- (6) Investigate history & clinical indication for body MR studies in most patients, become familiar with MR scanning protocols & concepts as well as the use of contrast media.
- (7) Describe patient risk factors for Nephrogenic Systemic Fibrosis (NSF) and understand the Interim LSU Public Hospital Department of Radiology Policy for gadolinium contrast administration in patients with renal disease.

Skill Objectives:

- (1) Provide emergency treatment for adverse reactions to intravenous contrast material,
- (2) Become facile with PACS and utilize available technical and written information sources to manage patient information, and
- (3) Coordinate activities in the reading room, including providing direction for the technologists, consultation for other clinicians, and answering the phone.
- (4) CT guided biopsy procedures may be performed on either this rotation or the Vascular Interventional Radiology rotation.
- (5) Protocol basic plain film, CT and MR studies of the abdomen and pelvis, cognizant of contraindications.
- (6) Assess and manage quality control of plain film, CT and MR studies of the abdomen and pelvis.

Behavior and Attitude Objectives:

- (1) Work with the health care team in a professional manner to provide patient-centered care, and

- (2) Apply ACR communication guidelines and notify referring clinician for urgent, emergent, or unexpected findings, and document in dictation.
- (3) Work closely with assigned faculty member to complete the daily workload of plain films, CTs and MRIs of the abdomen and pelvis. Any critical or reportable finding should be reported to the originating service and properly documented.

Medical Knowledge

Goal

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:

- (1) Discuss CT technology and its application, including dosimetry,
- (2) Learn MR physics and pertinent concepts for image interpretation of common studies such as the liver, the kidneys, pancreas, and female pelvis,
- (3) Identify relevant anatomic structures on CT and MR images of the abdomen and pelvis, and
- (4) Diagnose more common pathologic conditions in the abdomen and pelvis and understand their pathophysiology.

Skill Objectives:

- (1) Accurately interpret basic CTs of the abdomen and pelvis,
- (2) Perform and interpret basic post-processing (3D) images, and
- (3) Learn the approach to MR image interpretation for all but the most complex MRs of the abdomen and pelvis. MRI dictation should be undertaken.

Behavior and Attitude Objectives:

- (1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice-Based Learning and Improvement

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Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:

- (1) Assess CT and MR images for quality and suggest methods of improvement, and
- (2) Understand the role of MRI relative to other abdominal imaging methods such as CT in the evaluation of specific diseases and among varied patient populations.

Skill Objectives:

- (1) Incorporate on-line just-in-time learning at the workstation on a daily basis. For example ARRS Goldminer; MyPACS.net;
- (2) Demonstrate independent self-study using various resources including texts, journals, teaching files, and other resources on the internet, and
- (3) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:

- (1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
- (2) Follow-up interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal

Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:

- (1) Understand how their image interpretation affects patient care.

Skill Objectives:

- (1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay, and
- (2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
- (3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:

- (1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal

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- (2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:

- (1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:

(1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

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Knowledge Objectives:

(1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:

(1) Generate reports on most examinations with appropriate structure, content, accuracy and timeliness,

(2) Communicate effectively with physicians, other health professionals, and

(3) Obtain informed consent with the utmost professionalism.

Behavior and Attitude Objectives:

(1) Work effectively as a member of the patient care team.