Florida Hospital Diagnostic Radiology Residency
Vascular and Interventional Radiology Goals and Objectives
Training Location: Orlando

Many of the goals and objectives apply to all rotations and are listed below. Those goals that are more specific to a particular rotation are listed separately.

Vascular and Interventional Radiology Curriculum

The educational curriculum in Vascular and Interventional Radiology is comprised primarily of the rotations through the IR Section at FH Orlando where the Faculty provides direct training and supervision; as well as, a comprehensive series of lectures and conferences in Vascular and Interventional Radiology. Correlation is made on a case-by-case basis with other imaging modalities, facilitated by the PACs system. A series of interdepartmental conferences, grand rounds, Journal Clubs, meetings and other venues are expected to enhance the residents’ knowledge of Vascular and Interventional Radiology.

Because a full outline of disease entities and conditions is provided under each organ system elsewhere in the Radiology Residency Curriculum, a summarized curriculum for the IR Section follows:

- A review of the principles of physics and instrumentation/technology.
- A review of the normal anatomy, physiology, pathology and clinical conditions.
- The indications, limitations, contraindications and optimal protocols for the various studies, diseases, conditions, as well as, the optimal sequencing of various imaging studies is reviewed.
- The use of delivery systems, timing and dosages of medications, appropriate patient preparation, as well as indications and contraindications of procedures will be reviewed.
- The ACR appropriateness criteria and the economic implications for the health care system and patient of various diagnostic pathways are reviewed as appropriate.

IR Orientation

The Friday before your rotation starts, it is your responsibility to meet with the IR Supervisor, Jackie Bochter, to receive pre-order training. Jackie can be reached in her office by the IR department or by calling 407-303-8178.

Following the meeting with the IR Supervisor, it is your responsibility to meet with the IR Chief of Resident Education, Dr. Francisco Contreras, to receive a brief orientation to the Interventional Radiology Department as well as to discuss the goals, learning objectives, and milestones that are expected to be achieved during your IR rotation.

Daily Required Reading Minimum

On all rotations, residents are required to read a minimum of cases per day. Please see your preceptor at the beginning of your IR rotation to discuss the requirements.
Training using the ACGME Six-Core Competencies:

**Year 1: Vascular and Interventional Radiology**

1) **Patient Care:** At the end of the rotation, the resident should be able to:
   - Perform appropriate history and physical and write a complete pre-procedure note
   - Take an informed consent from patient for angiography/interventional procedures
   - Learn to order and interpret appropriate labs, abnormal lab values, and correct abnormal lab values
   - Learn to adequately assess and follow patients’ post-procedure course
   - Know the Florida Hospital minimal standards for ordering medications

Milestones include:
- Using established evidence based guidelines such as ACR appropriateness criteria
- Appropriately use the electronic health record to obtain relevant clinical information
- Competently perform basic fluoro studies under indirect supervision
- Recognize and manage complications of basic procedures

2) **Medical Knowledge:** At the end of the rotation, the resident should be able to:
   - Know the H&P of every patient for the day
   - Sterile technique
   - Informed consent
   - Learn to operate angiography table and controls
   - Learn how to set up and use angiography sterile tray
   - Learn sterile techniques, including pre-procedure scrub and patient preparation and dressing
   - Learn basic anatomy (external and fluoroscopic) for standard procedures
   - Learn peripheral venous and arterial access techniques including Seldinger technique
   - Hemostasis with manual compression techniques
   - Learn from the nurses how to operate infusion pumps and how to solve the problems when their alarms indicate a problem
   - Learn cardiac and great vessel anatomy so that you can recognize the location of a catheter with respect to the cardiac chambers, tricuspid valve, pulmonary artery and its branches, and aortic valve and great vessels arising from the aortic arch
   - Learn the indications, techniques, and contraindications for image-guided fine needle aspiration and biopsy
   - Localization of fluid for paracentesis or thoracentesis to be performed by another service
   - Ultrasound-guided paracentesis

**Medical Training:**
- First day of rotation – meet with Jackie Bochter and then shadow the IR Radiologist for the first day
- First week of rotation - go over order sets with IR manager (Jackie or Noelle)
- Biopsy rotations - starts at 8 am immediately after lecture
- Angio rotations – starts at 6:30 am PROMPT. Excused for morning lecture.
- IR call rotation – starts at 12 noon – 8 pm. Phone CALL after 8 pm
- Enter the orders for every patient – the night before
• You are responsible for reading off of the IR worklist
• Carry your IR Handbook with you at all times while on IR
• Transition of care must be performed at the beginning and end of every day, face to face, with your attending
• Mandatory attendance at the IR quarterly staff meeting if occurring during your rotation

Expected Reading List:
• Fundamentals of Diagnostic Radiology (Brant & Helms) – Interventional Chapters
• Vascular and Interventional Radiology: The Requisites

Milestones include:
  - Selecting appropriate protocols
  - Makes core observations
  - Formulate differential diagnoses
  - Recognize critical findings
  - Differentiate normal from abnormal

3) Practice-Based Learning and Improvement: At the end of the rotation, the resident should be able to:
• Review studies and interpretation of procedures performed by other members of the department during your rotation
• Watch and study the technique used by more experienced radiologists during your rotation to learn from them
• Review any complications or poor outcomes that occurred in the division during your rotation to learn the root cause of the problem and develop and implement mechanisms to avoid the complications or poor outcomes in the future

Milestones include:
  - Recognizes and manages contrast reactions
  - Describes the mechanism of radiation injury and the ALARA concept
  - Documents training in critical thinking skills and research design

4) Interpersonal and Communication Skills: At the end of the rotation, the resident should be able to:
• Learn dictation format
• Review surgical charge sheet and review ICD-9 and ICD-10 codes
• Begin to dictate basic cases at end of rotation
• Notify referring practitioner of results and immediately notify appropriate personnel of complications or poor outcome of procedure or of results requiring emergent care

Milestones include:
  - Communicating information about imaging and examination results in routine, uncomplicated cases
  - Obtains informed consent
  - Adhere to transfer of care policies
  - Generates accurate reports with appropriate elements for coding
  - Communicates urgent and unexpected findings according to RSF policy
5) **Professionalism:** Residents must:
- Be on time for all rotations. Residents are excused from morning lectures (not Physics lectures) while on IR rotation.
- Demonstrate compassion and respect for the patient, be punctual, have a professional appearance.
- Understand patient’s rights including, but not limited to, informed consent, advanced directives, do not resuscitate orders, HIPPA and patient privacy. Pain control, keeping patients draped to minimize patient exposure, appropriate patient clothing and covering during transportation, etc.
- Treat technologists, nurses, and other staff with respect and protect them from radiation or biological hazards.
- Teach patients about their conditions and care.

Milestones include:
- Recognizing the importance and priority of patient care and advocates for patient interests.
- Fulfills work related responsibilities.
- Recognizes personal limitations and seeks help when appropriate.
- Responds appropriately to constructive criticism.
- Maintains patient confidentiality.
- Attends required meetings.

6) **Systems-Based Practice:** Residents must:
- Confirm that you have the correct patient with two identifiers before starting a procedure.
- Confirm that you are about to perform procedure on the correct side before starting procedure.
- Use hospital information system to obtain laboratory data needed prior to study.
- Ensure that the personnel caring for the patients on the clinical units are aware of special orders or other preparation needed prior to study, e.g. infusing platelets.
- For telephone orders, have appropriate personnel write down orders and read it back to you.
- Be certain that arrangements have been made to have patient transported to the special procedures suite.
- Be sure that outpatients have necessary insurance authorization.
- Be certain that the personal caring for the patients on clinical units are aware of needed follow-up care.
- Maintain procedure log of all procedures in which you participated in the performance, interpretation, and reporting of the procedure for accreditation, credentialing, evaluation and possible program improvement. Record medical record number, date, type of procedure, supervising radiology attending, and any complication.
- Understand the role of Patient and Guest Relations in assisting patients to protect their rights and a source of patient information for staff.
- Understand the role of the Institutional Ethics Committee to help patients, family, and staff resolve ethical dilemmas.

Milestones include:
- Describes departmental QI initiatives.
- Describes the departmental QA system.
Year 2: Vascular and Interventional Radiology

1) Patient Care: At the end of the rotation, the resident should be able to:
   - Refine pre-procedure workup and post-procedure care
   - Interact more with referring physicians on initial consultation and follow-up
   - Participate in daily patient rounds
   - Understand when referral or other imaging modalities is necessary
   - Refine interpretive skills with complex pathology

Milestones include:
   - Recommends appropriate imaging of common conditions independently
   - Competently performs intermediate procedures
   - Recognizes and manages complications of intermediate procedures

2) Medical Knowledge: At the end of the rotation, the resident should be able to:
   - Learn selective catheterization techniques
   - Learn various catheter shapes and sizes available
   - Learn various wire shapes, sizes, and consistency available
   - Learn relatively common vascular anatomy variants
   - Learn cardiac and great vessel physiology so that you can recognize the pressure tracings obtained from the pulmonary catheter when it is located in the cardiac chambers and pulmonary artery and its branches and their significance during the procedure. It is optional, but recommended, that you review your Advanced Cardiac Life Support certification. It is required that you maintain Basic Life Support certification
   - Learn the variants in the anatomy of the great vessels of the aortic arch
   - Perform image-guided fine needle aspiration biopsy with minimal assistance
   - Learn the indications, contraindications, and techniques of abscess or fluid collection drainage
   - Pre-procedural evaluation: coagulation laboratory studies, anticoagulation medication
   - Stratification of risk for percutaneous procedures
   - Techniques for ultrasound-guided invasive procedures: understanding important landmarks and pitfalls of percutaneous procedures, including recognition of critical structures to be avoided
   - Biopsy of soft tissue masses with minimal assistance
   - Random core liver biopsy with minimal assistance
   - Aspiration of fluid collections, cysts and catheter placement for abscess and fluid drainage (pleura, peritoneal and other spaces) with minimal assistance
   - Ultrasound-guided thoracentesis with minimal assistance
   - Post-procedural evaluation: radiographic studies, patient monitoring, management of complications

Medical Training:
   - PGY 3 & 4 Rotate in the Neuroscience Institute with Dr. Michael Bellow*, 1 week during your IR rotation (*coordinate with his assistant Day 1 of your rotation and let your Preceptor and Program Coordinator know which week you will be with Dr. Bellew)
Expected Reading List:
- Interventional Radiology Procedures
- Teaching Atlas of Interventional Radiology

Milestones include:
- Selects appropriate protocols
- Makes secondary observations
- Narrows differential diagnosis
- Describes management options

3) Practice-Based Learning and Improvement: At the end of the rotation, the resident should be able to:
- Attend intradepartmental conferences that meet with the Interventional Radiology faculty to learn from our practice’s experience
- Consider involvement in ongoing research project or publication with faculty and possibly also with the Interventional Radiology staff and interested medical students

Milestones include:
- Demonstrates recognition and management of contrast reactions
- Accesses resources to determine exam specific average radiation dose info
- Accesses resources to determine safety of implanted devices and retained metal
- Works with faculty mentors to identify potential scholarly projects

4) Interpersonal and Communication Skills: At the end of the rotation, the resident should be able to:
- Take an active role in dictating more complicated cases
- Interact with x-ray technologists, medical students, fellow residents, and attending radiologists.
- Interact with clinicians when reviewing cases involving IR imaging studies.
- Can participate in administrative and scholarly committees when asked.
- Can serve as a liaison between our department with both other radiology departments and other specialty groups in our institution.

5) Professionalism: Residents should:
- Be on time for all rotations. Residents are excused from morning lectures (not Physics lectures) while on IR rotation
- Teach Medical Students and more junior radiology residents about Interventional Radiology topics
- Residents must demonstrate ability to interact with patient/patient’s family/clinician
- Is perceived as a role model for radiology from both within and outside the department.

Milestones include:
- Becomes an effective health care team member
- Continues to demonstrates professional behaviors described under year 1

6) Systems-Based Practice: At the end of the rotation, the resident should be able to:
• Regarding research or publication projects, understand the requirements and procedures for Institutional Review Board approval of research
• Be aware of the American College of Radiology Appropriateness criteria and Practice Guidelines and Technical Standards for Interventional Radiology (www.acr.org)

Milestones include:
- Incorporating QI into clinical practice
- Participates in the QA department process
- States relative cost of common procedures

**Year 3: Vascular and Interventional Radiology**

1) **Patient Care:** At the end of the rotation, the resident should be able to:
• Refine pre-procedure workup and post-procedure care
• Be the initial liaison with referring physicians on consultation and follow-up
• Present patients in daily morning rounds
• Demonstrate interpretive skills with complex pathology

Milestones include:
• Recommends appropriate imaging of common conditions independently
• Competently performs advanced procedures with minimal assistance
• Recognizes and manages complications of advanced procedures

2) **Medical Knowledge:** At the end of the rotation, the resident should be able to:
• Refine selective catheterization techniques
• Learn complex and uncommon vascular anatomy variants
• It is optional, but recommended, that you review your Advanced Cardiac Life Support certification. It is required that you maintain Basic Life Support certification
• Teach the variants in the anatomy of the great vessels of the aortic arch to medical students and more junior residents
• Perform complex image-guided fine needle aspiration biopsy
• Teach the indications, contraindications, and techniques of abscess or fluid collection drainage to medical students and more junior residents
• Refine pre-procedural evaluation: coagulation laboratory studies, anticoagulation medication
• Stratification of risk for percutaneous procedures
• Teach techniques for ultrasound-guided invasive procedures: understanding important landmarks and pitfalls of percutaneous procedures, including recognition of critical structures to be avoided to medical students and more junior residents
• Perform complex biopsies of soft tissue masses
• Refine post-procedural evaluation: radiographic studies, patient monitoring, management of complications

**Medical Training:**
• PGY 3 & 4 Rotate in the Neuroscience Institute with Dr. Michael Bellow*, 1 week during your IR rotation (*coordinate with his assistant Day 1 of your rotation and let your Preceptor and Program Coordinator know which week you will be with Dr. Bellew)
Expected Reading List:
- Handbook of Interventional Radiologic Procedures
- The Teaching Files: Interventional

Milestones include:
- Create appropriate protocols
- Refines secondary observations
- Concise and accurate differential diagnosis
- Recommends management options

3) Practice-Based Learning and Improvement: At the end of the rotation, the resident should be able to:
- Run intradepartmental conferences that meet with the Interventional Radiology faculty to learn from our practice’s experience
- Become involved in ongoing research project or publication with faculty and possibly also with the Interventional Radiology staff and interested medical students

Milestones include:
- Re-demonstrates recognition and management of contrast reactions
- Implements safety measures to decrease average radiation dose to patients
- Works with faculty mentors to identify potential scholarly projects

4) Interpersonal and Communication Skills: At the end of the rotation, the resident should be able to:
- Dictate complicated cases
- Perform pre-procedure planning with x-ray technologists, medical students, fellow residents, and attending radiologists.
- Interact with clinicians when reviewing cases involving IR imaging studies.
- Participate in administrative and scholarly committees when asked.
- Serve as a liaison between our department with both other radiology departments and other specialty groups in our institution.

5) Professionalism: Residents should:
- Be on time for all rotations. Residents are excused from morning lectures (not Physics lectures) while on IR rotation
- Teach Medical Students and more junior radiology residents about Interventional Radiology topics
- Residents must demonstrate ability to interact with patient/patient’s family/clinician
- Is perceived as a role model for radiology from both within and outside the department.

Milestones include:
- Becomes an effective health care team member and mentor more junior residents
- Demonstrates professional behaviors described under year 1 and 2

6) Systems-Based Practice: At the end of the rotation, the resident should be able to:
- Submit research or publication projects, understand the requirements and procedures for Institutional Review Board approval of research
• Be aware of the American College of Radiology Appropriateness criteria and Practice Guidelines and Technical Standards for Interventional Radiology (www.acr.org)
• Be aware of the Society of Interventional Radiology Clinical Practice Guidelines (www.sirweb.org)

Milestones include:
- Incorporating QI into clinical practice
- Participates in the QA department process
- States relative cost of common procedures

**Year 4: Vascular and Interventional Radiology**

1) **Patient Care:** At the end of the rotation, the resident should be able to:
• Knowledge of catheter maintenance and follow-up care (includes dressing changes, flushing, input and output, when to change and remove
• Provide emergent provisional interpretation as needed.
• Be able to direct the choice of imaging modality and protocol emergent studies.
• Understand when referral or other imaging modalities is necessary.
• Become a more autonomous consultant and teacher.

Milestones include:
- Recommends appropriate imaging of uncommon conditions independently
- Integrates current research and literature with guidelines, taking into consideration cost effectiveness and risk benefit analysis, to recommend imaging
- Competently performs advanced procedures
- Recognizes and manages complications of advanced procedures
- Independently performs studies and image guided procedures

2) **Medical Knowledge:** At the end of the rotation, the resident should be able to:
• Be able to complete basic diagnostic angiogram as primary operator
• Be able to complete key components of interventional procedures as primary operator
• Review cardiac arrhythmias, their physiology and their appearance on cardiac monitors and the emergent treatment of serious arrhythmias. It is optional but recommended that you renew your Advanced Cardiac Life Support certification. It is required that you maintain Basic Life Support certification
• Understand the pathologic basis of various disease entities and how that correlates with their angiographic appearance
• Develop more confidence in performing image-guided fine needle aspiration biopsy
• Perform abscess or fluid collection drainage
• Fine needle biopsy versus core biopsy in specific application, such as focal liver mass, renal mass, thyroid/parathyroid mass, retroperitoneal lymphadenopathy

**Medical Training:**
• Optional rotation in the Neuroscience Institute with Dr. Michael Bellow*, 1 week during your IR rotation (*coordinate with his assistant Day 1 of your rotation and let your Preceptor and Program Coordinator know which week you will be with Dr. Bellew)
**Expected Reading list:**
- Teaching Files Interventional Radiology
- Updates in Interventional Radiology
- Vascular and Interventional Imaging
- Abrams Angiography Interventional Radiology

Milestones include:
- Selects appropriate protocols and contrast agent/dose for advanced imaging
- Demonstrates knowledge of physical principles to optimize imaging quality
- Independently modifies protocols as determined by clinical circumstances
- Provides accurate, focused, and efficient interpretations
- Prioritizes differential diagnoses and recommends management
- Makes subtle observations
- Suggests a single diagnosis when appropriate
- Integrates current research and literature with guidelines to recommend management

3) **Practice-Based Learning and Improvement:** At the end of the rotation, the resident should be able to:
- Shows evidence of independent study using textbooks from expected reading list.
- Demonstrates appropriate follow up of interesting cases.
- Prepares teaching file of interesting cases.
- Is able and willing to make detailed presentations of IR studies at both intra- and inter-departmental conferences.
- Upon request, participates in educational courses for clinicians, medical students, and fellow residents.
- Upon request, participates in educational activities at the local/national level.

Milestones include:
- Re-demonstrates recognition and management of contrast reactions
- Communicates the relative risk of exam specific radiation exposure to patients and practitioners. Applies principles of image Gently and Wisely
- Communicates MR safety of common implants and retained foreign bodies to patients and practitioners
- Selects appropriate sedation agent and dose of conscious sedation

4) **Interpersonal and Communication Skills:** At the end of the rotation, the resident should be able to:
- Dictate, select ICD-9 and ICD-10 codes and generate surgical codes and all basic angiography and interventional cases
- Take an active role in presenting interesting interventional radiology cases in conferences to other radiologists and, when appropriate, to members of other departments

Milestones include:
- Communicates without supervision in challenging circumstances
- Efficiently generates clear and concise reports that do not require substantive faculty member correction on all cases
- Communicates appropriately under stressful situations
5) **Professionalism:** Resident should:
   - Be on time for all rotations. Residents are excused from morning lectures (not Physics lectures) while on IR rotation
   - Teach nursing staff, other Interventional Radiology staff, and residents from other departments, as well as, medical students and more junior radiology residents about topics in Interventional Radiology

Milestones include:
   - Is an effective team leader promoting patient welfare, patient autonomy, and social justice
   - Serves as a role model for professional behavior

6) **Systems-Based Practice:** At the end of the rotation, the resident should be able to:
   - Understand the requirements and procedures of the Institutional Review Board regarding approval of research and publication projects
   - Be aware of Society of Interventional Radiology (www.sirweb.org) resources including its online Clinical Practice Guidelines, Quality Improvement documents, consensus documents, credentialing statements, policy and position statements, technical assessment documents, and coding information

Milestones include:
   - Identifying and completing a systems based practice project

**Assessment tools for all Vascular and Interventional Rotations:**
   - Reviewing rotation curriculum, goals and objectives, as a benchmark for progress of resident, and success of faculty, is educating the resident. Discussion regarding the specifics of the document is encouraged to promote improvement of the resident’s learning and the program’s teaching. Positive points and deficiencies and unfulfilled goals and objectives should be discussed by the residents and faculty
   - Global ratings by faculty including rotation evaluation sheet
   - Resident’s performance discussing unknown cases in conference (one of the metrics on Global Evaluation sheet is particularly important)
   - Placing cases in teaching file (one of the metrics on Global Evaluation)
   - Conference attendance logs
   - In-service examination
   - 360 degree evaluations – supervisory technologists in radiology core
   - Invasive Procedure Log submitted to Program Director
   - Self assessment based on Rad Primer quizzes
   - Future plans: evaluation of teaching by medical students

**ACGME Required Documentation of Case & Procedure Logs:**
   - Thoracentesis – ultrasound guided
   - Paracentesis – ultrasound guided
   - PICC line placement
   - Diagnostic lumbar puncture
   - Lung Biopsy
   - Solid Organ Liver/Kidney Biopsy
   - Non-tunneled central venous access
- Abscess drainage – CT guided
- Femoral artery or venous access
- Chest tube placement or removal
- Tunneled central venous catheter removal
Angio-Interventional Imaging Curriculum based off the ABR Core Exam

1) Basic Procedures

Questions will assess whether the candidate possesses the knowledge, skills, and abilities needed for safe and effective care before, during, and after the procedure. Candidates are expected to have a detailed knowledge of the procedure itself, as well as pre- and post-procedure care.

a) Biopsies – for example, but not limited to: neck, chest, abdomen, pelvis, and extremities, including thyroid, lung, chest wall, liver, pancreas, renal, retroperitoneal, pelvic, extremity. Note: breast biopsies will be covered in the mammography section. Bone biopsies will be covered in the musculoskeletal section.

b) Aspirations – for example, but not limited to: neck, chest, abdomen, pelvis, and extremities, including thyroid, pleural, peritoneal, abdominal/pelvic/extremity cysts. Note that lumbar puncture and myelography will be covered in the neuroradiology section.

c) Central venous access – for example, but not limited to: PICCs and uncomplicated non-tunneled catheters

d) Abscess drainage – for example, but not limited to:
   uncomplicated chest, abdomen, pelvic, and superficial abscesses

e) Extremity venography

f) Catheter injections – for example, but not limited to:
   cholangiography, abscessogram, nephrostograms, and feeding tube checks

2) Complex Procedures

Since these procedures are typically performed by radiologists with more specialized training, Core Exam candidates are not expected to possess the knowledge, skills, and abilities required to perform these procedures. However, candidates are responsible for a general knowledge of these procedures. Test items will also cover pre- and post-procedure care in more detail since general radiologists are often the first to encounter patients whose clinical presentation and imaging findings warrant these complex interventions. Candidates are also expected to correctly distinguish between expected and unexpected clinical and imaging findings following these procedures.

a) Arteriography and arterial interventions, including angioplasty, stent placement, stent graft placement, lysis, embolization, thrombectomy, therapeutic infusion
b) Central venography and venous interventions, including IVC filter placement, IVC filter retrieval, angioplasty, stent placement, lysis, thrombectomy, sclerosis, tunneled/implanted catheter placement, dialysis interventions, and TIPS

c) Biliary interventions, including PTC, internal/external drainage, stent placement, stone removal, percutaneous cholecystostomy

d) Nephrostomy and ureteral stent placement, manipulation, exchange

e) Tumor ablation (radiofrequency, cryoablation, bland embolization, chemoembolization, radioembolization)

f) Feeding tube placement, manipulation, exchange

g) Complicated drainages, including transrectal drainage, tunneled catheter placement for pleural/peritoneal collections, and pediatric procedures

3) Physics knowledge needed to safely perform these procedures

   a) Optimal use of radiation

   b) Imaging artifacts
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

**Lung Biopsy – CT – guided**

Name of Resident: ___________________________ Rotation 1 ____ 2 ____ 3 ____ 4 ____

Resident demonstrates ability to obtain informed consent: Yes ____ No__ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes ____ No __ Faculty sign off ____

Resident has completed the following required procedure: **Lung Biopsy – CT-guided**

*(must complete 3 or more)*

1. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: _________________________________ Faculty Sign Off: __________

2. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: _________________________________ Faculty Sign Off: __________

3. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: _________________________________ Faculty Sign Off: __________

4. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: _________________________________ Faculty Sign Off: __________

5. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: _________________________________ Faculty Sign Off: __________

6. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: _________________________________ Faculty Sign Off: __________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Solid Organ (liver/kidney) Biopsy

Name of Resident: __________________ Rotation 1  ____ 2 ____ 3______4_____

Resident demonstrates ability to obtain informed consent: Yes ___ No__ Faculty sign off ____

Resident demonstrates ability to use sterile technique:         Yes ___ No __ Faculty sign off ____

Resident has completed the following required procedure: Solid organ (liver/kidney) CT-guided or ultrasound-guided biopsy (must complete 3 or more)

1. Patient MRN: _________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: __________

2. Patient MRN: _________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: __________

3. Patient MRN: _________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: __________

4. Patient MRN: _________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: __________

5. Patient MRN: _________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: __________

6. Patient MRN: _________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: __________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Paracentesis – Ultrasound-guided

Name of Resident: _______________________ Rotation 1 ____ 2 ____ 3 ____ 4 ____

Resident demonstrates ability to obtain informed consent: Yes ___ No__ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes ___ No __ Faculty sign off ____

Resident has completed the following required procedure: Paracentesis – ultrasound-guided__
(must complete 3 or more)

1. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

2. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

3. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

4. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

5. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

6. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

**Thoracentesis – Ultrasound-guided**

Name of Resident: _________________________ Rotation 1 ___ 2 ___ 3 ___ 4 ___

Resident demonstrates ability to obtain informed consent: Yes ___ No___ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes ___ No ___ Faculty sign off ____

Resident has completed the following required procedure: *Thoracentesis – ultrasound-guided* (must complete 3 or more)

1. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   
   Outcome: __________________________________ Faculty Sign Off: __________

2. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   
   Outcome: __________________________________ Faculty Sign Off: __________

3. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   
   Outcome: __________________________________ Faculty Sign Off: __________

4. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   
   Outcome: __________________________________ Faculty Sign Off: __________

5. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   
   Outcome: __________________________________ Faculty Sign Off: __________

6. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   
   Outcome: __________________________________ Faculty Sign Off: __________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Diagnostic Lumbar Puncture

Name of Resident: ___________________________ Rotation 1  ____ 2 _____ 3_____4_____

Resident demonstrates ability to obtain informed consent: Yes ___ No__ Faculty sign off ____

Resident demonstrates ability to use sterile technique:         Yes ___ No __ Faculty sign off ____

Resident has completed the following required procedure: Diagnostic Lumbar Puncture

(must complete 3 or more)

1. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: __________________________________ Faculty Sign Off: _____________

2. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: __________________________________ Faculty Sign Off: _____________

3. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: __________________________________ Faculty Sign Off: _____________

4. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: __________________________________ Faculty Sign Off: _____________

5. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: __________________________________ Faculty Sign Off: _____________

6. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: __________________________________ Faculty Sign Off: _____________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

**PICC Line Placement**

Name of Resident: ___________________________ Rotation 1 _____ 2 _____ 3 _____ 4 _____

Resident demonstrates ability to obtain informed consent: Yes ___ No __ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes ___ No __ Faculty sign off ____

Resident has completed the following required procedure: PICC Line Placement

*(must complete 3 or more)*

1. Patient MRN: ___________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: ____________________________ Faculty Sign Off: ____________

2. Patient MRN: ___________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: ____________________________ Faculty Sign Off: ____________

3. Patient MRN: ___________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: ____________________________ Faculty Sign Off: ____________

4. Patient MRN: ___________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: ____________________________ Faculty Sign Off: ____________

5. Patient MRN: ___________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: ____________________________ Faculty Sign Off: ____________

6. Patient MRN: ___________ Date of Birth: __________ Procedure Date: __________
   
   Outcome: ____________________________ Faculty Sign Off: ____________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Non-tunneled Central Venous Access

Name of Resident: __________________________ Rotation 1 2 3 4

Resident demonstrates ability to obtain informed consent: Yes __ No __ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes __ No __ Faculty sign off ____

Resident has completed the following required procedure: Non-tunneled central venous access (must complete 3 or more)

1. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________________ Faculty Sign Off: _____________

2. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________________ Faculty Sign Off: _____________

3. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________________ Faculty Sign Off: _____________

4. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________________ Faculty Sign Off: _____________

5. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________________ Faculty Sign Off: _____________

6. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________________ Faculty Sign Off: _____________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Abscess Drainage – CT-guided

Name of Resident: ___________________________   Rotation 1   ____ 2 _____ 3 _____ 4 _____

Resident demonstrates ability to obtain informed consent: Yes ___ No__ Faculty sign off ____
Resident demonstrates ability to use sterile technique:         Yes ___ No __ Faculty sign off ____
Resident has completed the following required procedure: Abscess drainage – CT-guided____
(must complete 3 or more)

1. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

2. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

3. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

4. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

5. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________

6. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ________________________________ Faculty Sign Off: _____________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Femoral Arterial or Venous Access

Name of Resident: __________________________  Rotation 1  ___ 2 ___ 3 ___ 4 ___

Residents demonstrates ability to obtain informed consent: Yes ___ No__ Faculty sign off ____

Residents demonstrates ability to use sterile technique: Yes ___ No ___ Faculty sign off ____

Residents has completed the following required procedure: Femoral arterial or venous access____

(must complete 3 or more)

1. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ____________________________ Faculty Sign Off: ______________

2. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ____________________________ Faculty Sign Off: ______________

3. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ____________________________ Faculty Sign Off: ______________

4. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ____________________________ Faculty Sign Off: ______________

5. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ____________________________ Faculty Sign Off: ______________

6. Patient MRN: ___________ Date of Birth: __________ Procedure Date: ______________
   Outcome: ____________________________ Faculty Sign Off: ______________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

Chest Tube Placement or Removal

Name of Resident: _________________________ Rotation 1 2 3 4

Resident demonstrates ability to obtain informed consent: Yes ___ No __ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes ___ No __ Faculty sign off ____

Resident has completed the following required procedure: Chest tube placement or removal

(must complete 3 or more)

1. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________ Faculty Sign Off: __________

2. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________ Faculty Sign Off: __________

3. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________ Faculty Sign Off: __________

4. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________ Faculty Sign Off: __________

5. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________ Faculty Sign Off: __________

6. Patient MRN: __________ Date of Birth: __________ Procedure Date: __________
   Outcome: ________________________________ Faculty Sign Off: __________
INTERVENTIONAL RADIOLOGY PROCEDURE COMPETENCY CHECKLISTS

Instructions: All IR forms for competency are to be completed by the end of the 3rd IR rotation. At the end of each 1 month rotation, residents should place these forms in their portfolio. At the beginning of the month a new set of forms may be completed and the data compiled to as to meet all competencies by the end of the 3rd rotation.

**Tunneled Central Venous Catheter Removal**

Name of Resident: ___________________ Rotation 1 _____ 2 _____ 3 _____ 4 _____

Resident demonstrates ability to obtain informed consent: Yes ___ No__ Faculty sign off ____

Resident demonstrates ability to use sterile technique: Yes ___ No ___ Faculty sign off ____

Resident has completed the following required procedure: Tunneled central venous catheter removal

*(must complete 3 or more)*

1. **Patient MRN:** __________ **Date of Birth:** __________ **Procedure Date:** __________

   Outcome: ________________________________ Faculty Sign Off: ____________

2. **Patient MRN:** __________ **Date of Birth:** __________ **Procedure Date:** __________

   Outcome: ________________________________ Faculty Sign Off: ____________

3. **Patient MRN:** __________ **Date of Birth:** __________ **Procedure Date:** __________

   Outcome: ________________________________ Faculty Sign Off: ____________

4. **Patient MRN:** __________ **Date of Birth:** __________ **Procedure Date:** __________

   Outcome: ________________________________ Faculty Sign Off: ____________

5. **Patient MRN:** __________ **Date of Birth:** __________ **Procedure Date:** __________

   Outcome: ________________________________ Faculty Sign Off: ____________

6. **Patient MRN:** __________ **Date of Birth:** __________ **Procedure Date:** __________

   Outcome: ________________________________ Faculty Sign Off: ____________
By signing this document you are confirming that you have received and reviewed, with your preceptor, the vascular and interventional radiology goals and objectives for this academic year.

This receipt will be kept in your personal file.

Resident Name (please print)___________________________________________________________

Resident Signature

by signing this – you confirm that you have reviewed the G&O with your preceptor

Date___________________________________________

Preceptor Signature

by signing this – you confirm that you have reviewed the G&O with the resident

Date___________________________________________