

## **Application Guidelines for Early Specialization in Interventional Radiology (ESIR) Review Committee for Radiology**

The Review Committee for Radiology will consider applications for Early Specialization in Interventional Radiology (ESIR). All ACGME-accredited diagnostic radiology programs with a status of Continued Accreditation are eligible to apply. Programs need not complete a formal application form, but must submit the seven application components listed below. Email completed applications to Executive Director Felicia Davis, MHA: [fdavis@acgme.org](mailto:fdavis@acgme.org).

### **Purpose**

The purpose of the ESIR designation is to standardize the interventional radiology education of diagnostic radiology residents who identify a desire to specialize in interventional radiology early. Review Committee approval of the submitted application provides diagnostic radiology program directors with assurance that their ESIR curriculum will qualify their residents for advanced entry into an independent interventional radiology residency. It also assures the independent interventional radiology residency program director that the entering resident's prior experiences are adequate to fulfill one year of interventional radiology education and training.

Diagnostic radiology residents who complete approved ESIR education and satisfy the interventional radiology procedural requirements, to include a minimum of 500 patient procedural encounters, will be eligible to start in an advanced (second-year) position in the independent interventional radiology program to which they match. Diagnostic radiology residents in ESIR education are required to maintain documentation of their patient procedural experience via a patient procedural encounters log. The program is responsible for monitoring the number and documentation of resident patient procedural encounters.

NOTE: Upon a resident's completion of the ESIR education, the program director must provide written verification that the 500 patient procedural encounters were conducted. This written verification, along with the patient procedural encounters log, must be provided to the independent interventional radiology program director upon that resident's matriculation in the program.

### **Application Process**

Diagnostic radiology programs seeking ESIR designation must submit documents for review and approval by the Review Committee. The approval process does not require a site visit. The required documents listed below describe the program resources and curriculum pertinent to ESIR education. It is expected that interventional radiology faculty members will assist the diagnostic radiology program director in completing the ESIR application.

The components of the ESIR application are:

1. Letter of support
2. Description of ESIR resident selection process
3. Block diagram showing the proposed interventional radiology curriculum, along with an explanation of interventional radiology-related rotation activities
4. Categories of planned patient procedural encounters
5. Estimate of the total volume of interventional radiology patient procedural encounters for an ESIR resident

6. Attestation that the interventional radiology section is currently providing clinical care in the outpatient clinic setting and inpatient consultations
7. List of interventional radiology faculty members with qualifications, to include faculty members who will be providing education and training for interventional radiology-related rotations

#### *Detailed Information*

Information regarding each of these components is provided below.

1. **Letter of support:** A letter of support for the ESIR program should be signed by the program director of the diagnostic radiology residency program; the designated institutional official (DIO) of the program's Sponsoring Institution; the radiology department chair; and the chief of the interventional radiology division, the program director of the interventional program, or the designated educational director of the interventional service. The letter must also include attestation of sufficient procedural resources to provide all learners, including other resident rotators and subspecialty fellows (or interventional radiology residents), with a sufficient breadth and balance of procedural experience in the essential areas.
2. **Description of the ESIR resident selection process:** The diagnostic radiology program director should describe the method for ESIR resident selection, including:
  - In which PGY(s) the ESIR selection occurs
  - Maximum number of residents selected for ESIR each year
  - Maximum number of residents in the interventional radiology domain in PGY- 5 and PGY-6 at a given time, specifying ESIR residents and integrated/independent interventional radiology residents if applicable

The Review Committee needs assurance that the selection process is conducted in a manner that is clear and transparent to residents.

3. **Block diagram showing the proposed interventional radiology curriculum along with an explanation of interventional radiology-related rotation activities:** ESIR education requires a total of 11 interventional radiology or interventional radiology-related rotations (minimum of 44 weeks), and an intensive care unit (ICU) rotation of at least four continuous weeks within the four-year diagnostic radiology residency. The interventional radiology education in the PGY-2-4 should be included in the ESIR curriculum.

An interventional radiology-related rotation is an educational experience that does not take place within the interventional radiology division and is not supervised by qualified interventional radiologists. Interventional radiology-related rotations are intended to provide residents with experience, education, and training in core interventional radiology procedures that are performed outside of the interventional radiology section, or to provide additional clinical or procedural experience relevant to interventional radiology.

Of the 11 required interventional radiology or interventional radiology-related rotations, it is expected that at least eight rotations (minimum of 32 weeks) will take place in the interventional radiology section under the supervision of interventional radiology faculty members. One rotation (four continuous weeks) must take place in the ICU. Generally, there will be three interventional radiology rotations (four-week blocks) in the first 36 months of diagnostic radiology residency, but more than three interventional radiology or interventional radiology-related rotations in the PGY-2-4 are allowed at the discretion of the diagnostic radiology program director.

*NOTE: The Review Committee has determined that a rotation in interventional radiology breast interventions may count as an interventional radiology-related rotation, but cannot be double-counted toward the diagnostic radiology requirement for 12 weeks of clinical rotations in breast imaging [PR 4.11.n.).]*

### **Summary**

The minimum ESIR requirements are: at least eight interventional radiology rotations; one ICU rotation; and up to three interventional radiology-related rotations during the PGY-2-5. An ESIR curriculum may include more rotations in interventional radiology, up to a maximum of 16 as allowed in the Program Requirements for Graduate Medical Education in Diagnostic Radiology.

A. Provide a block diagram highlighting the interventional radiology and interventional radiology-related rotations, including the ICU rotation, during the PGY-2-5.

*An example is shown in **Appendix 1**.*

B. For the ICU and all interventional radiology-related rotations, provide additional information, including:

- a copy of the goals and objectives for each rotation (for breast interventions rotations, provide a separate goals and objectives document that demonstrates how this rotation differs from the goals and objectives of a breast imaging rotation); and,
- an estimate of the number and type of interventional radiology patient procedural encounters that will apply toward the interventional experience.

*Sample documentation is provided in **Appendix 2**.*

- 4. Categories of planned patient procedural encounters:** Complete a table indicating the procedural areas that will constitute the residents' experience with interventional radiology and interventional radiology-related patient procedural encounters. *A table of interventional radiology procedural categories is provided in **Appendix 3**.*
- 5. Procedural volume:** Indicate the expected total volume of interventional radiology and interventional radiology-related patient procedural encounters to be performed by an ESIR resident. This includes the total number of procedures over four years of education. Note that a minimum of 500 interventional radiology or interventional radiology-related patient procedural encounters is required for entry into the second year of an independent interventional radiology residency.
- 6. Attestation of interventional radiology clinical services:** Provide attestation that the interventional radiology service at your institution is currently (over the most recent 12-month period) providing clinical care in the form of outpatient clinics and inpatient clinical consultations.

7. **List of interventional radiology faculty members with qualifications:** Complete a table listing the names and qualifications of the faculty members who will be responsible for education in interventional radiology and interventional radiology-related rotations. This must include evidence of each faculty member's qualifications to provide interventional radiology training. This could include, but is not limited to, American Board of Radiology vascular interventional radiology (VIR) subspecialty certification, interventional radiology-related education and training in non-radiology specialties, or clinical and academic focus on image-guided procedures evidenced by clinical and research experience. *A table is provided in **Appendix 4**.*

#### **Appendices**

1. Sample block diagram of the proposed interventional radiology curriculum
2. Sample goals and objectives for interventional radiology-related rotations
3. Categories of planned patient procedural encounters for ESIR residents (programs should enter information directly into this table and submit it as part of the application documents)
4. Interventional radiology and interventional radiology-related faculty member names and qualifications (programs should enter information directly into this table and submit it as part of the application documents)

## Appendix 1. Sample Block Diagram of Proposed Interventional Radiology Curriculum

Programs may submit the block diagram that is currently uploaded in the Accreditation Data System (ADS) with all interventional radiology and interventional radiology-related rotations highlighted (i.e., modify the current rotation block diagram to indicate by highlighting the planned interventional radiology and interventional radiology-related rotations in which an ESIR resident will participate).

Year 1	Block	1	2	3	4	5	6	7	8	9	10	11	12	13
	Institution	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp Y	Hosp Y	Hosp Y
	Rotation	Peds	NM	Neuro	U/S	Body Imaging	Chest	MSK	Chest	ER	IR	GI	Body Imaging	Neuro
	Weeks	4	4	4	6	4	4	4	4	2	4	4	4	4
Year 2	Block	1	2	3	4	5	6	7	8	9	10	11	12	13
	Institution	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp Y	Hosp Y	Hosp Y	Hosp Y	Hosp Y
	Rotation	Peds	NM	Mammo	IR	Body Imaging	MSK	Chest	Neuro	U/S	Neuro	Float/ER	CardioThoracic	GI
	Weeks	4	4	4	4	4	6	4	4	2	4	4	4	4
Year 3	Block	1	2	3	4	5	6	7	8	9	10	11	12	13
	Institution	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp Y	Hosp Y	Hosp Y
	Rotation	Peds	NM	Mammo	U/S	Cardiac	MSK	Neuro	AIRP	Float/ER	Body MRI	IR	U/S	Neuro
	Weeks	6	4	4	6	4	4	2	4	2	6	4	4	2
Year 4	Block	1	2	3	4	5	6	7	8	9	10	11	12	13
	Institution	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp X	Hosp Y	Hosp Y	Hosp Y	Hosp Y
	Rotation	IR (ESIR)	NM	Mammo	Peds	IR (ESIR)	IR (ESIR)	IR (ESIR)	Neuro IR	Float/ER	ICU	MSK Procedure	Body Procedure	IR (ESIR)
	Weeks	6	4	4	4	4	4	4	4	2	4	4	4	4

Vacation is taken during rotations.

This is tracked to ensure that adequate experience occurs in all subsections of radiology and that requirements in nuclear medicine, mammography, and ESIR are met.

## Appendix 2. Sample Goals and Objectives for Interventional Radiology-Related Rotations

### *Background*

As per the Program Requirements for Graduate Medical Education in Diagnostic Radiology, each assignment must have competency-based goals and objectives. For the purposes of the ESIR application, a more simplified, abbreviated version of the goals and objectives may be submitted. However, this abbreviated version does not replace the need for the actual competency-based goals and objectives necessary for the rotation per requirement 4.2.b.

### *Interventional Radiology-Related Rotations*

Education in the domain of interventional radiology may be obtained outside of the interventional radiology section itself. Such education is termed “interventional radiology-related.” Rotations providing a resident with image-guided procedural skills or clinical care experience falling within the domain of interventional radiology may qualify as *interventional radiology-related*. Examples of interventional radiology-related rotations include:

#### *Rotations Outside of the Radiology Department*

- Clinical rotation on the vascular surgery service with exposure to and procedural experience in the management of peripheral vascular disease
- Clinical rotation in medical oncology or hepatology with exposure to clinical management of oncology patients or patients with advanced liver disease

#### *Rotations within Radiology Outside of Interventional Radiology*

- A procedural body imaging rotation centered on the imaging/patient care/procedures related to abdominopelvic biopsy, drainage, ablation, or other intervention
  - One option would be for this resident to act as the key person to manage modality choice for patients in need of the image-guided interventions mentioned.
- A chest imaging rotation focused on the imaging/patient care/procedures related to thoracic disease such as biopsy, thoracentesis, or lung cancer ablation
- A musculoskeletal intervention rotation centered on the imaging/patient care/procedures related to musculoskeletal disease (e.g., joint aspiration/injection, tumor ablation, arthrography)

*NOTE: The Review Committee has determined that mammography does not count as an interventional radiology-related rotation.*

### *Sample Goals and Objectives for Interventional Radiology-Related Rotations and ICU Rotation*

Two examples of goals and objectives for interventional radiology-related rotations that fulfill the ESIR application requirements are provided on the next two pages.

## **Example 1**

### **Abbreviated Goals and Objectives for an Interventional Radiology-Related Rotation**

**Goals and Objectives:** Interventional radiology-related rotation

**Rotation Name/Designation:** Body procedure

**Description of Rotation:** This is a four-week rotation within the diagnostic radiology body imaging section. Dr. I. Du-Proc is the section head and oversees the rotation. Drs. A. Stick and R.U. Reddy also supervise residents for procedures.

#### **Goals:**

- Develop ability to assess patient and imaging in preparation for computed tomography (CT)- or ultrasound-guided body interventions
- Develop competency in image-guided body interventions
- Gain proficiency in post-procedure care of patient

#### **Objectives:**

- Complete pre-procedure workup of patients to undergo image-guided body interventions during the four-week rotation
- Perform image-guided biopsies, parentheses, and drainages of the abdominal cavity during the rotation
- Complete post-procedure care and follow-up of patients that have undergone image-guided procedures, including documentation of procedure, dictations and clinic notes, and medical record orders

#### **Expectations:**

- During the four-week rotation, the ESIR resident should be involved with all daily image-guided procedures. On average, the resident should expect to perform six to 10 parentheses, four to eight abdominal cavity biopsies, and two to six drainage catheter placements. Additional potential procedures include renal and biliary catheter placements.
- The resident must preview and work up all patients undergoing these procedures, as well as enter appropriate pre- and post-procedure orders and notes.
- When not involved with procedures or procedure work-up, the resident is expected to review, interpret, and staff out abdominal CT studies with appropriate faculty members.

## **Example 2**

### **Abbreviated Goals and Objectives for an Interventional Radiology-Related Rotation**

**Goals and Objectives:** Interventional radiology-related rotation

**Rotation Name/Designation:** Neuro-interventional

**Description of rotation:** This is a four-week rotation within the diagnostic radiology neuroradiology section. Dr. Smart is the section head and oversees the rotation. Drs. Hacker and Luc also supervise residents for procedures.

#### **Goals:**

- Develop ability to assess patient and imaging in preparation for neuroradiologic interventions
- Develop venous access and catheter skills
- Gain proficiency in post-procedure care of patient

#### **Objectives:**

- Complete pre-procedure work-up of patients to undergo neuro-interventions during the four-week rotation
- Assist on and perform cervical and intracranial angiography, with experiences in venous access, aortic and carotid catheterization, catheter and wire exchange, and hemostasis control
- Complete post-procedure care and follow-up of patients that have undergone image-guided procedures, including documentation of procedure, dictations, and clinic notes, and medical record orders

#### **Expectations:**

- During the four-week rotation, the ESIR resident should be involved with daily image-guided procedures. On average, the resident should expect to perform approximately 15 venous access procedures and 10 to 15 aortic and/or carotid catheter studies, and be assistant to approximately 10 intracranial interventions, including aneurysm coiling, embolization, or stent placements.
- The resident must preview and work up patients undergoing these procedures, as well as enter appropriate pre- and post-procedure orders and notes.
- When not involved with procedures or procedure work-up, the resident is expected to review, interpret, and staff out CT and magnetic resonance imaging (MRI) vascular studies with appropriate faculty members.



### Appendix 3. Categories of Planned Interventional Radiology Patient Procedural Encounters

<b>Invasive Imaging and Interventional Procedures</b>	<b>Anticipated ESIR Resident Experience (Y/N)</b>
<b>Non-Invasive Vascular Imaging</b>	
CTA/MRA Abdomen/Pelvis	Choose an item.
CTA/MRA Extremities	Choose an item.
CTA/MRA Chest	Choose an item.
Lower Extremity Arterial Segmental Evaluation	Choose an item.
<b>Angiography</b>	
Carotid/Cerebral Arteriography	Choose an item.
Extremity Arteriography	Choose an item.
Mesenteric/Renal Arteriography	Choose an item.
Dialysis Graft/Fistula Evaluation	Choose an item.
<b>Arterial Vascular Intervention</b>	
Arterial Angioplasty	Choose an item.
Arterial Stent Placement	Choose an item.
Lower Extremity Arterial Revascularization	Choose an item.
Peripheral Thrombolysis/Thrombectomy	Choose an item.
Embolization (Any)	Choose an item.
TACE	Choose an item.
Radioembolization	Choose an item.
UFE	Choose an item.
Aortic Stent Graft	Choose an item.
Carotid Stent Placement	Choose an item.
Stroke Thrombolysis	Choose an item.
<b>Venous Vascular Interventions</b>	
TIPS	Choose an item.
Port Placement	Choose an item.
Tunneled Catheter Placement	Choose an item.
IVC Filter Placement	Choose an item.
Venous Ablation	Choose an item.
Venous Thrombolysis	Choose an item.
Hemodialysis Intervention	Choose an item.
<b>Non-Vascular Intervention</b>	
Biopsy	Choose an item.
Chest Tube Placement	Choose an item.
Nephrostomy/Nephroureteral Tube Placement	Choose an item.

<b>Invasive Imaging and Interventional Procedures</b>	<b>Anticipated ESIR Resident Experience (Y/N)</b>
Biliary Drainage Catheter Placement	Choose an item.
Percutaneous GI Tract Tube Placement	Choose an item.
Abscess Drainage	Choose an item.
Tumor Ablation	Choose an item.
Vertebroplasty/Kyphoplasty	Choose an item.
Paracentesis/Thoracentesis	Choose an item.
<b>Clinical Activities</b>	
Inpatient Interventional Radiology Admissions by Interventional Radiology Service (to include 23-hour stay)	Choose an item.
New Outpatient Interventional Radiology Clinic Visits	Choose an item.

#### Appendix 4. Interventional Radiology and Interventional Radiology-Related Faculty Names and Qualifications

Faculty Member Name	Specialty/ Subspecialty Area	ABMS Board Certified (Y/N)? If Yes, include Name of Certificate	Other Qualifications to Teach Interventional Radiology