Imaging Assistant, Magnetic Resonance

1. Introduction

ARRT requires candidates applying for certification and registration to meet the Professional Education Requirements specified in the *ARRT Rules and Regulations*. ARRT's Imaging Assistant, Magnetic Resonance *Clinical Competency Requirements* are one component of the Professional Education Requirements.

ARRT periodically updates the requirements based on a practice analysis, which is a systematic process to delineate the job responsibilities typically required of imaging assistants. The result of this process is a task inventory which is used to develop the clinical competency requirements (see section 2 below) and the content specifications which serve as the foundation for the didactic requirements and the examination.

2. Clinical Competency Requirements

The purpose of the clinical competency requirements is to document that individuals have demonstrated competence performing the clinical activities fundamental to a particular discipline. Competent performance of these fundamental activities, in conjunction with mastery of the cognitive knowledge and skills as documented by the examination requirement, provides the basis for the acquisition of the full range of procedures typically required in a variety of settings. Demonstration of clinical competence means that the candidates has performed the procedure independently, consistently, and effectively during the course of his or her formal education. The following pages identify the specific procedures for the clinical competency requirements. Candidates may wish to use these pages, or their equivalent, to record completion of the requirements. The pages do NOT need to be sent to the ARRT.

The candidate can report demonstrating positioning and anatomical landmarking for up to 10 procedures per day.

Completion of the clinical competency requirements will not involve the Imaging Assistant, Magnetic Resonance candidate to produce an image (e.g., protocol and parameter selection, data acquisition).

2.1 General Performance Considerations

2.1.1 Patient Diversity

Demonstration of competence should include variations in patient characteristics such as age, gender, and medical condition.

2.1.2 Simulated Performance

The ARRT requirements specify that general patient care tasks may be simulated as designated in the specific requirements below. Simulations must meet the following criteria:

- ARRT defines simulation of a clinical task routinely performed on a patient as the candidate completing the hands-on tasks on a live human being, using the same level of cognitive, psychomotor, and effective skills required for performing a task on a patient in a clinical setting standardized to mirror the physical facilities where practice occurs.
- ARRT requires that competencies performed as a simulation must meet the same criteria as competencies demonstrated on patients. For example, the competency must be performed under direct observation of an ARRT certified and registered MR technologist or an ARRT certified and registered Imaging Assistant, Magnetic Resonance and be performed independently, consistently, and effectively.
- A maximum of 20 demonstrations of positioning and anatomical landmarking for procedures may be performed on volunteers.

2.2 Imaging Assistant, Magnetic Resonance Requirements

As part of formal training, candidates must demonstrate competence in the clinical tasks identified below. These clinical tasks are listed in more detail in the following sections.

- 6 mandatory general patient care procedures
- 8 mandatory MRI safety requirements
- 7 quality control activities (6 required plus 1 if the site operates remote scanning)
- Minimum of 100 demonstrations of positioning and anatomical landmarking in total
- Minimum of 3 demonstrations of positioning and anatomical landmarking for each mandatory procedure
- The elective procedures contribute to the total
- No more than 2 procedures may be performed on the same patient that requires different coils per day
- Be 18 years old and have a high school diploma or GED®

2.2.1 General Patient Care Procedures

Candidates are required to be basic life support (BLS) certified by an organization recognized by ARRT organization recognized by ARRT. They must have demonstrated competence in the remaining 5 patient care procedures listed below. The procedures should be performed on patients whenever possible, but simulation is acceptable if state or institutional regulations prohibit candidates from performing the tasks on patients. Simulation should mimic the intended procedure (e.g., candidate prepares the site for venipuncture, but sticks the needle in an inanimate object) as closely as allowed.

Completion of the General Patient Care Procedures must be verified by an ARRT certified and registered technologist or an ARRT certified and registered Imaging Assistant, Magnetic Resonance. The verifier must witness the competency in person.

General Patient Care Procedures	Date Completed	Competence Verified By
BLS Certified		
Vital Signs (Blood Pressure, Pulse, Respiration)		
Standard Precautions		
Transfer of Patient		
Care of Patient Medical Equipment (*e.g., Oxygen Tank, IV Tubing)		
Venipuncture		

*The abbreviation “e.g.,” is used to indicate that examples are listed in parenthesis, but that it is not a complete list of all possibilities.

2.2.2 MRI Safety Requirements

Candidates must demonstrate competence in 8 areas of MRI Safety listed below.

Completion of the MRI Safety Requirements must be verified by an ARRT certified and registered MR technologist, an ARRT certified and registered Imaging Assistant, Magnetic Resonance, certified and registered MRSO, MRSE, MRMD (ABMRS), or the designated facility MR medical director. The verifier must witness the competency in person (preferred) or remotely by using live video and audio.

MRI Safety Requirements	Date Completed	Competence Verified By
Patient Screening, Personnel, and Non-Personnel for MR Safe, MR Conditional, and MR Unsafe Devices and Objects		
MR Safety Zones		
Static Magnetic Field (e.g., Translational and Rotational Forces)		
Radiofrequency Field (e.g., Thermal Heating [SAR], Coil Positioning, Patient Positioning, Insulation)		
Gradient Magnetic Fields (e.g., Induced Current, Auditory Considerations)		
Communication and Monitoring Considerations (e.g., Sedated Patients, Verbal and Visual Contact, Vital Signs)		
Contrast Media Safety (e.g., Allergic Reactions, Extravasation)		
Other MRI Safety Considerations (e.g., Cryogen Safety, Fire, Medical Emergencies, Laser Alignment Lights, Quench)		

2.2.3 MRI Positioning and Anatomical Landmarking

Candidates must demonstrate competence in the 11 mandatory demonstration of positioning and landmarking listed on the following page. To verify clinical competence, the candidate must complete and document a minimum of 3 repetitions for each mandatory procedure of positioning and landmarking. Candidates may use the elective procedures to reach the minimum number of 100 repetitions of positioning and landmarking.

In accordance with state law when performing imaging assistant tasks, the candidate must independently demonstrate appropriate:

Patient skills including:

- evaluation of requisition and/or medical record
- identification of patient
- documentation of patient history including allergies
- safety screening including implants
- patient education concerning the procedure
- patient care and assessment
- preparation of examination room
- Standard Precautions
- preparation and/or administration of contrast media
- MRI safety procedures and precautions
- patient discharge with post-procedure instructions

Technical and procedural skills including:

- selection of optimal imaging coil
- proper connection of coil
- patient positioning
- If site operates remote scanning, establish and maintain communication with scanning technologist
- prepare and/or activate power injector if used.

2.2.3 MRI Positioning and Anatomical Landmarking (continued)

Completion of the MRI positioning and anatomical landmarking for 11 mandatory procedures and optional elective procedures for a total of 100 repetitions. All must be verified by an ARRT certified and registered MR technologist or an ARRT certified and registered Imaging Assistant, Magnetic Resonance. The verifier must witness the competency in-person (preferred) or remotely by using live video and audio.

Head and Neck	**Mandatory**	**Elective**
Brain (e.g., pituitary, IAC, orbits, MRA, MRV)	✓	
Temporomandibular Joints (TMJs)		✓
Spine		
Cervical or Neck (e.g., soft tissue, MRA, MRV)	✓	
Thoracic	✓	
Lumbar	✓	
Breast		
Breast (e.g., screening, implant rupture)		✓
Thorax		
Chest (noncardiac)		✓
Chest (cardiac)		✓
Brachial plexus		✓
Abdomen		
Abdomen (e.g., liver, MRCP pancreas, kidneys, MR enterography, MR urography)	✓	
Pelvis		
Pelvis (e.g., male, female, bony) or Sacrum-Coccyx	✓	
Musculoskeletal		
Wrist, Hand, or Finger (thumb and non-thumb)	✓	
Ankle, Foot, or Toes	✓	
Elbow		✓
Shoulder	✓	
Hip	✓	
Knee	✓	
Long Bones (upper or lower extremity)		✓

2.2.4 MRI Quality Control Tasks

Candidates must demonstrate competence in the 7 quality control activities (6 required plus 1 if the site operates remote scanning).

Completion of the MRI Quality Control Tasks must be verified by an ARRT certified and registered MR technologist or an ARRT certified and registered Imaging Assistant, Magnetic Resonance. The verifier must witness the competency in-person (preferred) or remotely by using live video and audio.

MRI Quality Control and Environment	Date Completed	Competence Verified By
Equipment Inspection (e.g., Coils, Cables, Door Seals)		
Monitor Cryogen Levels		
Room Temperature and Humidity		
Routine QC Phantom Setup		
Start Up and Shut Down the MR Scanner		
Daily Safety Check		
If Site Operates Remote Scanning, Establish and Maintain Communication with Scanning Technologist		