Sonography

1. Introduction

Candidates for certification and registration are required to meet the Professional Education Requirements specified in the *ARRT Rules and Regulations*. ARRT's *Sonography Didactic and Clinical Competency Requirements* are one component of the Professional Education Requirements.

The requirements are periodically updated based upon a practice analysis which is a systematic process to delineate the job responsibilities typically required of sonographers. The result of this process is a task inventory which is used to develop the clinical competency requirements (see section 4 below) and the content specifications which serve as the foundation for the didactic competency requirements (see section 3 below) and the examination.

2. Documentation of Compliance

To document that the Didactic and Clinical Competency Requirements have been satisfied by a candidate, the program director (and authorized faculty member if required) must sign the ENDORSEMENT SECTION of the *Application for Certification and Registration*.

3. Didactic Competency Requirements

The purpose of the didactic competency requirements is to verify that individuals had the opportunity to develop fundamental knowledge, integrate theory into practice and hone affective and critical thinking skills required to demonstrate professional competency. Candidates must successfully complete coursework addressing the topics listed in the ARRT Content Specifications for the Sonography Examination. These topics would typically be covered in a nationally-recognized curricula published by organizations such as Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS). Educational programs accredited by a mechanism acceptable to ARRT generally offer education and experience beyond the minimum requirements specified here.

4. Clinical Competency Requirements

The purpose of the clinical competency requirements is to verify that individuals certified and registered by the ARRT have demonstrated competency 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 covered by the sonography examination, 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 candidate 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.

4.1 General Performance Considerations

4.1.1 Patient Diversity

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

4.1.2 Elements of Competence

Demonstration of clinical competence requires that the program director or the program director's designee has observed the candidate performing the procedure independently, consistently, and effectively during the course of the candidate's formal educational program.

4.2 Sonography Specific Requirements

As part of the educational program, candidates must demonstrate competence in the clinical activities identified below:
- Five mandatory patient care procedures and be CPR certified;
- Five mandatory scanning techniques;
- Two mandatory equipment care activities;
- 16 mandatory imaging procedures; and
- 11 elective imaging procedures selected from a list of 24 procedures.

These clinical activities are listed in more detail in the following sections.

4.2.1 Mandatory Patient Care Procedures, Scanning Techniques, and Equipment Care Activities

Candidates are required to be CPR certified. They must also demonstrate competence in the remaining five patient care procedures, five scanning techniques, and two equipment care activities. The activities should be performed on patients whenever possible, but simulation is acceptable if state or institutional regulations prohibit candidates from performing the procedures on patients.

Mandatory Patient Care Procedures	**Date Completed**	**Competence Verified By**
CPR Certification		
Vital Signs (blood pressure, pulse, respiration)		
Monitoring level of consciousness and respiration		
Standard Precautions		
Sterile technique		
Verification of informed consent		
Mandatory Scanning Techniques	**Date Completed**	**Competence Verified By**
Gray Scale (2D)		
Color Doppler		
Power Doppler		
Spectral Doppler		
M-Mode		
Mandatory Equipment Care	**Date Completed**	**Competence Verified By**
Prepare transducer for intracavitary use		
Clean and disinfect transducer		

4.2.2 Sonography Procedures

Candidates must demonstrate competence in the 16 mandatory procedures listed below. Candidates are also required to demonstrate competence in 11 of the 24 elective procedures. Multiple competencies may be demonstrated on one patient. When performing the sonography procedures, the candidate must demonstrate appropriate:
- patient preparation, including evaluation of requisition or medical record, preparation of exam room, identification of patient, infection control procedures (i.e., Standard Precautions), patient assessment, and instruction concerning the procedure;
- exam protocol, including patient positioning, sonographic technique, parameter selection, image display, image annotation and labeling, archiving, and documentation of procedure; and
- image evaluation, including image quality, optimal demonstration of anatomic region and pathology, and exam completeness.

The candidate's clinical education should include variation in patient characteristics, provide ample opportunity for demonstration of both normal and variant anatomy, as well as important pathologies and medical conditions.

A variety of instructional methods may be useful for teaching the clinical skills identified in this document. For purposes of satisfying these requirements, candidates must be evaluated while scanning actual patients. Simulation is not acceptable for final competence assessment of imaging procedures, unless otherwise specified in this document.

Abdomen	Mandatory	Elective	Date Completed	Competence Verified By
Liver	✓			
Gallbladder/biliary tract/CBD	✓			
Pancreas	✓			
Spleen	✓			
Gastrointestinal tract (e.g., appendix)		✓		
Kidneys	✓			
Adrenals		✓		
Bladder	✓			
Lymph nodes		✓		
Prostate		✓		
Aorta	✓			
IVC	✓			
Main portal vein	✓			
Vasculature (e.g., hepatic, renal, aortic branches)		✓		
Abdominal wall (e.g., hernia)		✓		

4.2.2 Sonography Procedures (continued)

Superficial Structures	Mandatory	Elective	Date Completed	Competence Verified By
Scrotum and testes	✓			
Breast and axilla		✓		
Superficial masses		✓		
Thyroid	✓			
Salivary glands/parotid glands		✓		
Musculoskeletal		✓		
Non-cardiac chest (e.g., pleural space, lung)		✓		
Gynecology	**Mandatory**	**Elective**	**Date Completed**	**Competence Verified By**
Uterus	✓			
Adnexa (including ovaries)	✓			
Obstetrics	**Mandatory**	**Elective**	**Date Completed**	**Competence Verified By**
First trimester	✓			
Second trimester	✓			
Third trimester	✓			
Fetal biophysical profile		✓		
Interventional Procedures	**Mandatory**	**Elective**	**Date Completed**	**Competence Verified By**
Biopsy		✓		
Aspiration		✓		
Drainage procedures		✓		
Vascular Procedures	**Mandatory**	**Elective**	**Date Completed**	**Competence Verified By**
Post catheterization complication		✓		
Venous extremity Doppler (upper)		✓		
Venous extremity Doppler (lower)		✓		
Carotid Doppler		✓		
Pediatric	**Mandatory**	**Elective**	**Date Completed**	**Competence Verified By**
Head		✓		
Spine		✓		
Hips		✓		
Pyloric stenosis		✓		
Bowel (intussusception, appendix)		✓		