Introduction to the Registered Radiologist Assistant Certification and Registration Application Packet

Overview: This application packet includes the materials that you will need to apply for ARRT® certification and registration as a Registered Radiologist Assistant. Candidates should review these materials as well as the information on the R.R.A. certification and registration program included in the "Registered Radiologist Assistant" section on ARRT's website (www.arrt.org). The Entry-Level Clinical Activities (ELCA) document serves as the basis for the eligibility requirements and should be reviewed.

Certification and Registration Eligibility Checklist: Candidates must meet the following eligibility requirements prior to participating in an examination:

____ 1. **ARRT Certified and Registered in Radiography.**

Candidates must be certified and registered in radiography by the ARRT in order to be eligible for certification and registration as an R.R.A. R.R.A.s must maintain registration in radiography at all times to be eligible for continued certification and registration as an R.R.A. ARRT verifies satisfaction of this requirement against its records upon receipt of a candidate's application materials.

____ 2. **One Year of Acceptable Clinical Experience**.

Candidates must complete the equivalent of at least one year of full-time clinical experience following radiography certification and registration. The clinical experience may be earned concurrent to the radiologist assistant educational program, but may not be satisfied with radiologist assistant educational program activities. The clinical experience must be patient care related at the professional level. It is generally anticipated that this experience will be earned as a staff radiographer; however, experience could include related healthcare experience such as that earned as an EMT. The candidate attests that this requirement has been met on the Application for Certification and Registration form and agrees to supply additional documentation of the experience if audited by ARRT. ARRT reserves the right to audit all documentation related to a candidate's eligibility for a period of five years after the candidate submits the application materials.

____ 3. **Educational Program Completion**.

Candidates must successfully complete a radiologist assistant educational program that is recognized by ARRT, and completion must occur prior to sitting for the examination. In order to be recognized by ARRT, educational programs must meet the Recognition Criteria for Radiologist Assistant Educational Programs (recognition requirements). Successful program completion by the candidate, or scheduled completion, is attested to by the program director on the Application for Certification and Registration. If completion is scheduled, but has not occurred when the application is sent to ARRT, ARRT will subsequently contact the program director to verify completion.

____ 4. **Didactic Competence Requirement.**

As part of the educational program, candidates must successfully complete coursework addressing the topics listed in the ARRT *Content Specifications for the Registered Radiologist Assistant Examination*. These topics should be covered as part of a nationally recognized radiologist assistant curriculum such as the one published by the ASRT. The program director attests to a candidate's satisfaction of this requirement on the Application for Certification and Registration.

____ 5. **Clinical Education Requirements**.

An essential part of the radiologist assistant's education is the radiologist-supervised clinical preceptorship. During the preceptorship, students learn to perform radiologic procedures and clinical activities appearing in the R.R.A. ELCA. There will be numerous opportunities for the student to be observed and evaluated by the preceptor and other healthcare professionals, and for the student to critically evaluate and reflect on his or her own clinical experiences. The ARRT requires that candidates for certification and registration maintain a record of their clinical experiences and evaluations in the form of a clinical portfolio. The clinical portfolio consists of four components. The specific documentation for each component is described in 5A-5D below.

____ 5A. **Component 1: *Clinical Experience Documentation and Competence Assessments.***

Candidates for certification and registration must document performance of a set number of cases for a specified list of radiologic procedures and must successfully pass a competence assessment for each procedure (i.e., be evaluated by a preceptor and be deemed competent). The candidate's clinical experience and competence assessments are documented on the Summary of Clinical Experience and Competence Assessment Form (CR-1) which is submitted to ARRT as part of the application materials. The competence assessments for individual procedures are documented on Forms CR-2A through CR-2E and are also submitted to ARRT as part of the application materials.

____ 5B. **Component 2: *Professional Activities and Accomplishments Record.***

Radiologist assistant students are expected to engage in critical self-evaluation and continued professional development during their educational program. Candidates for certification and registration must maintain the Professional Activities and Accomplishment Record and provide it to ARRT if the candidate's records are audited. Students should include material in this record that they feel best captures and summarizes the multitude of experiences during their education as a radiologist assistant.

____ 5C. **Component 3: *Case Studies.***

Candidates must have submitted five case studies to their program directors for review and discussion during the educational program. It is expected that a case study will be one to three pages in length, address certain pieces of essential information (i.e., history, indications for procedure) and, if appropriate, be accompanied by information related to the procedure (e.g., images, lab results). The format may be modified to suit the needs of the program director, preceptor, and candidate. Candidates must maintain the five case studies and provide them to ARRT if the candidate's records are audited.

____ 5D. **Component 4: *Summative Evaluation Rating Scales.***

The radiologist serving as the chief preceptor completes an overall evaluation of the candidate's cognitive, psychomotor, and affective skills at the end of the preceptorship. The term "summative evaluation" denotes that this is an end-of-the-preceptorship summary assessment. The scales address five performance domains: evaluation of medical information; patient communication; radiation safety; professionalism; and specific procedural skills (GI/Chest, GU, invasive vascular, invasive nonvascular). To be eligible for certification and registration, the candidate must receive a rating of three or higher in each domain. The form is submitted to ARRT as part of the application materials.

____ 6. **Baccalaureate Degree**.

Candidates must have earned a baccalaureate degree from an accredited educational institution. The degree does not need to have been awarded by the radiologist assistant educational program. Candidates attest to the satisfaction of this requirement on the Application for Certification and Registration and agree to supply additional documentation if audited.

____ 7. **ARRT Ethics Requirements**.

Candidates for certification and registration must be persons of good moral character and must not have engaged in conduct that is inconsistent with the *ARRT Standards of Ethics* or the *ARRT Rules and Regulations* and must have complied and agree to continue to comply with the *ARRT Standards of Ethics* and the *ARRT Rules and Regulations*. Candidates attest to the satisfaction of this requirement on the Application for Certification and Registration. The Application for Certification and Registration also requires the candidate to report any misdemeanor or felony convictions.

____ 8. **Application for Certification and Registration**.

The Application for Certification and Registration along with the required fee and the forms noted above must be received by ARRT within five years of completion of an ARRT-recognized educational program.

NOTE: Candidates graduating from an educational program beginning January 1, 2013, will have three years to establish eligibility for ARRT certification and registration, as opposed to the five years that is available to those who complete their program by December 31, 2012.

The American Registry of Radiologic Technologists®

*Didactic and Clinical Portfolio Requirements for Certification and Registration as a Registered Radiologist Assistant**

Effective January 2011

Didactic Requirements

Candidates for certification and registration as a Registered Radiologist Assistant are required to meet the Professional Education Requirements specified in Section 2.03 of the *ARRT Rules and Regulations*. One of the Professional Education Requirements is the following didactic competence requirement: Candidates must successfully complete coursework addressing the topics listed in the *ARRT Content Specifications for the Registered Radiologist Assistant Examination*. These topics should be covered as part of a nationally recognized curriculum such as the one published by the American Society of Radiologic Technologists (ASRT).

Overview of Clinical Portfolio Requirements

An essential part of the radiologist assistant's training is the preceptorship, during which he or she participates in the provision of radiologic services under the supervision of one or more board-certified radiologists. During the preceptorship, students will learn to perform a majority of the radiologic procedures and clinical activities appearing in the Entry-Level Clinical Activities (ELCA). There will be numerous opportunities to be observed and evaluated by the preceptor and other health care professionals, and for the student to critically evaluate and reflect on his or her own clinical experiences.

The ARRT requires that candidates for certification and registration maintain a record of their clinical experiences and evaluations in the form of a *Clinical Portfolio*. An important goal of the *Clinical Portfolio* is to ensure that the student is exposed to and becomes proficient at a minimum number of these procedures and clinical activities. The *Clinical Portfolio* serves as a mechanism for maintaining and documenting these evaluative opportunities. The following pages are essential reading for the radiologist assistant student, the preceptor, and the program director.

Contents of Clinical Portfolio

The *Clinical Portfolio* consists of the following components: (1) Clinical Experience Documentation and Clinical Competence Assessments; (2) Professional Activities and Accomplishments Record; (3) Case Studies; and (4) Summative Evaluation Rating Scales. The table summarizes each component.

Component	Purpose	Documentation
1. Clinical Experience Documentation and Competence Assessments.	To document performance of a specified number of certain radiologic procedures, and to ensure thorough evaluations of competence.	ARRT checklist and competence assessment forms. Signed by chief preceptor or other radiologist serving as preceptor. Submitted to ARRT as part of the application materials.
2. Professional Activities and Accomplishments Record.	To encourage ongoing self-assessment and professional development.	The student maintains various documents (e.g., CE, ACLS, presentations) in personal files. Not submitted, but subject to audit.
3. Case Studies.	To promote critical and reflective thinking about patient management.	Five cases reviewed and signed by program director. Not submitted, but subject to audit.
4. Summative Evaluation Rating Scales.	To obtain an end-of-preceptorship evaluation of competence in several skill domains.	ARRT assessment forms completed by chief preceptor and signed by program director. Submitted to ARRT as part of the application materials.

* *Note: Candidates who complete their educational program during 2011 or 2012 may use either the previous requirements (effective 2005) or the current requirements (effective 2011). Candidates who graduate after December 31, 2012 may no longer use the previous competency requirements.*

Clinical Portfolio Requirements and Documentation

The four components of the *Clinical Portfolio* are intended to complement one another and to supplement ARRT's ethics and examination requirements. Although no single component provides an adequate description of a student's clinical experiences, the four components, in conjunction with the examination, result in a comprehensive summary of the candidate's qualifications.

Program directors, candidates, and preceptors may find that many of the requirements listed here are educational activities that would be completed even if not required for certification and registration. The ARRT has formalized some of these activities and developed a standard mechanism for documenting their completion. The paragraphs below offer a synopsis of the requirements, while the pages that follow present the requirements in detail.

1. Clinical Experience Documentation and Competence Assessments. Candidates for certification and registration must (a) perform certain mandatory and elective radiologic procedures for a specified number of cases; and (b) successfully pass a competence assessment for each procedure (i.e., be evaluated by a preceptor for one case for each mandatory and elective procedure). The ARRT has developed forms for recording number of cases and for the preceptor to use when completing the competence assessments.

2. Professional Activities and Accomplishments Record. The primary intent of this requirement is to ensure that the student engages in critical self-evaluation and continued professional development. Candidates are at liberty to include materials they feel best capture and summarize the multitude of experiences they have during their education.

3. Case Studies. Candidates must submit 5 case studies to their program director for review and discussion. It is expected that case studies will be one to three pages in length, address certain pieces of essential information (e.g., history, indications for procedure) and, if appropriate, be accompanied by information related to the procedure (e.g., images, lab results). The format may be modified to suit the needs of the program director, preceptor, and candidate.

4. Summative Evaluation Rating Scales. This performance evaluation instrument is completed by the chief preceptor at the end of the radiologist assistant's preceptorship. The term "summative evaluation" is used to denote that it is an end-of-term summary assessment. It allows the radiologist serving as the chief preceptor to complete an overall evaluation of the candidate's cognitive, psychomotor, and affective skills. The scales address five performance domains: evaluation of medical information; patient communication; radiation safety; professionalism; and specific procedural skills (GI/Chest, GU, invasive vascular, invasive nonvascular). To be eligible for certification and registration, the candidate *must receive a rating of three or higher* in each skill domain.

Components 1 and 4 of the *Clinical Portfolio* are submitted to ARRT as part of the application materials. Candidates are expected to retain components 2 and 3 for a period of five years after completing their preceptorship, during which time they may be subjected to audit by the ARRT. The remainder of this document describes the requirements in detail, provides examples, and presents forms that should be used and submitted to ARRT.

Registered Radiologist Assistant (R.R.A.)
Component 1: Clinical Experience Documentation and Competence Assessments

The R.R.A. Entry-Level Clinical Activities (ELCA) document identifies the radiologic procedures and clinical activities that serve as the basis for R.R.A. certification and registration standards. As part of the preceptorship, the student will be exposed to the vast majority of those procedures. This document identifies those clinical procedures the candidate is expected to master to become eligible for certification and registration by ARRT.

As part of their preceptorship, candidates for certification will satisfy two types of clinical requirements. First, they must submit documentation indicating the number of cases completed for a broad range of radiologic procedures. Second, candidates are required to demonstrate competence performing the various radiologic procedures. The specific requirements for the *Clinical Experience Documentation and Competence Assessments* follow. Forms for documenting the clinical and assessment requirements can be found at these links: CR-1, CR-2A thru 2E. Candidates must complete all clinical procedures prior to the examination administration date. Examination results will not be released until all clinical experience and competence assessment forms have been received and evaluated by ARRT.

Clinical Experience Documentation

A minimum of 500 total cases are required. A total of 36 procedures comprise the clinical experience and competence requirements for R.R.A. certification and registration. All candidates are required to perform 12 mandatory procedures for the specified minimum number of cases. In addition, candidates select a subset from the 24 elective procedures. The maximum number of mandatory and elective cases indicates the maximum reportable cases, not the maximum number a student may perform during their training program. Candidates are encouraged to complete as many additional mandatory and elective procedures as achievable.

Mandatory Procedures: The table on the following pages identifies the 12 mandatory radiologic procedures and the minimum and the maximum number of cases required for each procedure. Candidates are required to complete:

- A minimum of 375 of the cases must be from the mandatory procedures category.
- For each mandatory procedure, the specified minimum number of cases must be completed.

For example, assume a hypothetical candidate performed 70 upper GIs, 60 small bowel studies, 35 barium enemas, 30 cystograms, 65 arthrograms, 30 lumbar punctures, 30 NG tube placements, 20 paracenteses, and 75 PICC procedures. Of those, 50 UGI, 25 small bowel studies, 35 barium enemas, 30 cystograms, 45 arthrograms, 25 lumbar punctures, 25 NG tube placements, 20 paracenteses and 30 PICC line placements equaling 285 cases, which count toward the minimum 375 mandatory cases.

Elective Procedures: The table on the following pages also identifies 24 elective procedures from which candidates must select a minimum of 3 elective procedures. Candidates are required to complete:

- A minimum of 125 cases must be from the elective procedures category.
- For each selected elective, the specified minimum number of cases must be completed for that procedure.

For example, assume a hypothetical candidate performed 30 fistulograms, 5 extremity venograms, 35 port injections, 20 myelograms, 5 breast needle localizations, 5 retrograde urethrograms, and 15 insertions of tunneled central venous catheters. Of those, 15 fistulograms, 5 extremity venograms, 15 port injections, 15 myelograms, 0 breast needle localizations (did not meet the minimum required number), 5 retrograde urethrograms, and 15 insertions of tunneled central venous catheters total 70 which count toward the minimum 125 elective cases.

Candidates must use Form CR-1 for summarizing the number of cases for each procedure. In addition, candidates are expected to keep a detailed record of each case completed (e.g., date, time, facility) for audit purposes.

Clinical Competence Assessment

For all mandatory and elective procedures, candidates must be evaluated according to the following guidelines. The competence assessment is to be completed:

- Once for each procedure. A minimum of 15 assessment forms (12 mandatory and 3 elective) are to be submitted to ARRT.
- By a radiologist using the ARRT evaluation forms that follow. Note that there are separate forms for each class of procedures (GI and Chest, GU, invasive vascular, invasive nonvascular, and post-processing activities).
- At any time during the preceptorship, presumably after the student has completed a sufficient number of cases under appropriate instruction to acquire proficiency.

It is not necessary for the student to complete all cases (e.g., 15 cystograms) prior to presenting for competence assessment. The assessment may be completed at any time after the student has acquired sufficient skill performing a procedure.

During training it is expected that students will receive appropriate levels of supervision. For additional information on supervision, refer to the ELCA document. All procedures must be performed on actual patients; simulated procedures cannot be used to satisfy the competence assessments.

Required Documentation

Form CR-1: Summary of Clinical Experience and Competence Assessments

1. This form is completed by the student as he or she: (a) completes the requisite number of cases for the mandatory and elective procedures; and (b) is evaluated by a radiologist on the mandatory and elective procedures.
2. The student records the number of cases completed for each mandatory and elective procedure he or she performs.
3. The student records only the date that the competency assessment was completed. Note that the actual competence assessments are completed by a radiologist using Form CR-2, as described immediately below.
4. The preceptor and program director must verify and sign the bottom of Form CR-1. This form is submitted to ARRT at the time of application.

Form CR-2: Clinical Competence Assessments (Forms CR-2A through CR-2E)

1. These forms are completed by the radiologist at the time he or she evaluates the student. There are separate evaluation forms for each class of radiologic procedures:

Form CR-2A: GI/Chest	Form CR-2C: invasive nonvascular
Form CR-2B: GU	Form CR-2D: invasive vascular
	Form CR-2E: post-processing activities

2. The radiologist and student are required to sign the bottom of Form CR-2 for each assessment, which is subsequently reviewed and signed by the program director.
3. The student must submit a minimum total of 15 assessment forms to ARRT (12 mandatory and 3 elective procedures).

Form CR-1

Summary of Clinical Experience and Competence Assessments

	Experience Documentation				
Procedure	**Mandatory or Elective**	**Minimum and Maximum Number of Repetitions**		**Actual Number Completed**	**Competence Assessment Date**
Gastrointestinal and Chest		**Min**	**Max**		
Esophageal study – must fluoro and image the esophagus, may be with UGI	Mandatory	20	50		
Swallowing function study (participate in procedure and provide initial observations to radiologist)	Mandatory	20	50		
Upper GI study	Mandatory	20	50		
Small bowel study – direct the study and spot TI	Mandatory	10	25		
Small bowel study via enteroclysis tube	Elective	15	30		
Enema with barium, air, or water soluble contrast	Mandatory	20	50		
Nasogastric/enteric and orogastric/enteric tube placement – may not require image guidance	Mandatory	10	25		
T-tube cholangiogram	Elective	5	15		
Defecography	Elective	5	15		
Perform chest fluoroscopy for diaphragmatic motion	Elective	5	15		
Genitourinary		**Min**	**Max**		
Antegrade urography through existing tube (e.g., pyelostography, nephrostography)	Elective	5	15		
Cystography or voiding cystourethrography, with a minimum of 10 bladder catheterizations	Mandatory	15	30		
Retrograde urethrography or urethrocystography	Elective	5	15		
Loopography through existing tube	Elective	5	15		
Hysterosalpingography – imaging only	Elective	5	15		
Hysterosalpingography – procedure and imaging (physician participation required)	Elective	20	50		

Form CR-1(continued)

	Experience Documentation				
Procedure	**Mandatory or Elective**	**Minimum and Maximum Number of Repetitions**		**Actual Number Completed**	**Competence Assessment Date**
Invasive Nonvascular		**Min**	**Max**		
Arthrogram (radiography, CT, and MR) joint injection and aspiration	Mandatory	15	45		
Lumbar puncture	Mandatory	10	25		
Cervical, thoracic, or lumbar myelography – imaging only	Elective	5	15		
Lumbar puncture with contrast	Elective	15	45		
Thoracentesis with or without catheter	Mandatory	20	50		
Placement of catheter for pneumothorax	Elective	10	25		
Paracentesis	Mandatory	10	25		
Abscess, fistula, or sinus tract study	Elective	5	15		
Injection for sentinel node localization	Elective	5	15		
Breast needle localization	Elective	20	50		
Change of percutaneous tube or drainage catheter	Elective	5	15		
Thyroid biopsy	Elective	20	50		
Liver biopsy (random)	Elective	20	50		
Invasive Vascular		**Min**	**Max**		
Peripheral insertion of central venous catheter (PICC) placement	Mandatory	10	30		
Insertion of non-tunneled central venous catheter	Elective	20	50		
Insertion of tunneled central venous catheter	Elective	30	50		
Port injection	Elective	5	15		
Extremity venography	Elective	5	15		
Post-Processing		**Min**	**Max**		
Perform CT post-processing	Elective	5	15		
Perform MR post-processing	Elective	5	15		
Total Number of Cases	**500**				

Chief Preceptor Signature and Date _____

Program Director Signature and Date _____

Student Signature and ARRT ID # _____

Form CR-2A
Clinical Competence Assessment for GI and Chest Procedures

(esophageal study; swallowing function study; upper GI study; small bowel study; small bowel study via enteroclysis tube; enema with barium, air, or water soluble contrast; nasogastric/enteric and orogastric/enteric tube placement; t-tube cholangiogram; defecography; chest fluoroscopy)

Directions: This form should be completed by the radiologist supervising the procedure after the student has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the student must perform each clinical activity safely and effectively on a consistent basis.

Procedure:_____ Date Performed: _____

Clinical Activity	Performance Standard		
	does not meet	meets	exceeds
Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).	❑	❑	❑
Interview patient to obtain, verify, or update medical history. Explain procedure (risks, benefits, alternatives, and follow-up) and any required pharmaceuticals. Obtain or verify informed consent and confirm adequate exam preparation (e.g., diet, medications).	❑	❑	❑
Perform physical exam and evaluate lab studies as needed; report findings to the radiologist.	❑	❑	❑
Prepare and administer contrast agents prescribed by radiologist. Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.	❑	❑	❑
Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).	❑	❑	❑
Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.	❑	❑	❑
Educate patient regarding follow-up care and verify comprehension.	❑	❑	❑
Document procedure and record exceptions from established protocol.	❑	❑	❑

	does not meet	meets	exceeds
Overall Evaluation	❑	❑	❑

Radiologist Comments

(Note any particular strengths or areas for improvement for the student, or unusual features of the case that warrant consideration.)

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Radiologist Signature _____ **Date** _____

Student Signature _____ **Date** _____

Form CR-2B
Clinical Competence Assessment for GU Procedures

(antegrade urography; cystography or voiding cystourethrography, retrograde urethrography or urethrocystography; loopography; hysterosalpingography)

Directions: This form should be completed by the radiologist supervising the procedure after the student has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the student must perform each clinical activity safely and effectively on a consistent basis.

Procedure:_____ Date Performed: _____

Clinical Activity	Performance Standard		
	does not meet	meets	exceeds
Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).	❑	❑	❑
Interview patient to obtain, verify, or update medical history. Explain procedure (risks, benefits, alternatives, and follow-up) and any required pharmaceuticals. Obtain or verify informed consent and confirm adequate exam preparation (e.g., diet, medications).	❑	❑	❑
Perform physical exam and evaluate lab studies as needed; report findings to the radiologist.	❑	❑	❑
Perform urinary catheterization; prepare and administer contrast agents prescribed by radiologist.	❑	❑	❑
Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.	❑	❑	❑
Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).	❑	❑	❑
Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.	❑	❑	❑
Educate patient regarding follow-up care and verify comprehension.	❑	❑	❑
Document procedure and record exceptions from established protocol.	❑	❑	❑

	does not meet	meets	exceeds
Overall Evaluation	❑	❑	❑

Radiologist Comments

(Note any particular strengths or areas for improvement for the student, or unusual features of the case that warrant consideration.)

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Radiologist Signature _____ **Date** _____

Student Signature _____ **Date** _____

Form CR-2C
Clinical Competence Assessment for Invasive Nonvascular Procedures

(arthrogram, joint injection and aspiration; lumbar puncture; myelography lumbar puncture with contrast; thoracentesis; placement of catheter for pneumothorax paracentesis; abscess, fistula, or sinus tract study; injection for sentinel node localization; breast needle localization; change of percutaneous tube or drainage catheter; thyroid biopsy; liver biopsy)

Directions: This form should be completed by the radiologist supervising the procedure after the student has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the student must perform each clinical activity safely and effectively on a consistent basis.

Procedure:_____ Date Performed: _____

Clinical Activity	**Performance Standard**		
	does not meet	meets	exceeds
Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).	❑	❑	❑
Interview patient to obtain, verify, or update medical history. Explain procedure (risks, benefits, alternatives, and follow-up) and any required pharmaceuticals. Obtain or verify informed consent and confirm adequate exam preparation (e.g., diet, medications).	❑	❑	❑
Perform physical exam and evaluate lab studies as needed; report findings to the radiologist.	❑	❑	❑
Administer local anesthetic; select and insert needle, catheter, or tube to required location; collect fluids and measure pressures as needed; administer prescribed contrast; maintain aseptic environment throughout procedure.	❑	❑	❑
Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.	❑	❑	❑
Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).	❑	❑	❑
Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.	❑	❑	❑
Educate patient regarding follow-up care and verify comprehension.	❑	❑	❑
Document procedure and record exceptions from established protocol.	❑	❑	❑

	does not meet	meets	exceeds
Overall Evaluation	❑	❑	❑

Radiologist Comments

(Note any particular strengths or areas for improvement for the student, or unusual features of the case that warrant consideration.)

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Radiologist Signature _____ **Date**_____

Student Signature _____ **Date** _____

Form CR-2D
Clinical Competence Assessment for Invasive Vascular Procedures

(PICC placement; insertion of non-tunneled central venous catheter; insertion of tunneled central venous catheter; port injection; extremity venography)

Directions: This form should be completed by the radiologist supervising the procedure after the student has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the student must perform each clinical activity safely and effectively on a consistent basis.

Procedure:_____ Date Performed: _____

Clinical Activity	Performance Standard		
	does not meet	meets	exceeds
Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).	❑	❑	❑
Interview patient to obtain, verify, or update medical history. Explain procedure (risks, benefits, alternatives, and follow-up) and any required pharmaceuticals. Obtain or verify informed consent and confirm adequate exam preparation (e.g., diet, medications).	❑	❑	❑
Perform physical exam and evaluate lab studies as needed; report findings to the radiologist.	❑	❑	❑
Administer local anesthetic; select and insert needle or catheter to required location; administer contrast and guide catheter; maintain aseptic environment throughout procedure.	❑	❑	❑
Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.	❑	❑	❑
Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).	❑	❑	❑
Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.	❑	❑	❑
Educate patient regarding follow-up care and verify comprehension.	❑	❑	❑
Document procedure and record exceptions from established protocol.	❑	❑	❑

	does not meet	meets	exceeds
Overall Evaluation	❑	❑	❑

Radiologist Comments

(Note any particular strengths or areas for improvement for the student, or unusual features of the case that warrant consideration.)

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Radiologist Signature _____ **Date** _____

Student Signature _____ **Date** _____

Form CR-2E
Clinical Competence Assessment for Post-Processing Activities

(CT post-processing; MR post-processing)

Directions: This form should be completed by the radiologist supervising the procedure after the student has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the student must perform each clinical activity safely and effectively on a consistent basis.

Procedure:_____ Date Performed: _____

Clinical Activity	Performance Standard		
	does not meet	meets	exceeds
Retrieve image data from archive system.	❑	❑	❑
Preview image data set.	❑	❑	❑
Load image data set.	❑	❑	❑
Display volume using MPR, MIP, SSD, VRT, or CPR.	❑	❑	❑
Use segmentation or editing tools to remove obstructive anatomy.	❑	❑	❑
Evaluate final images.	❑	❑	❑
Use measuring tools (distance, ROI, percent of stenosis calculation).	❑	❑	❑
Export images to server, secure web site, or report.	❑	❑	❑

	does not meet	meets	exceeds
Overall Evaluation	❑	❑	❑

Radiologist Comments _____

(Note any particular strengths or areas for improvement for the student, or unusual features of the case that warrant consideration.)

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Radiologist Signature _____ **Date** _____

Student Signature _____ **Date** _____

Registered Radiologist Assistant (R.R.A.) Component 2: Professional Activities and Accomplishments Record

Purpose

Most components of the Clinical Portfolio are highly structured and intended to accomplish very specific goals. In contrast, the Professional Activities and Accomplishments Record (*Accomplishments Record*) allows candidates to include materials they feel best summarize the variety of their preceptorship experiences. The intent of the Accomplishments Record requirement is twofold: (1) to help ensure active participation in the education and evaluation processes through critical self-reflection; (2) to lay the foundation for and to encourage career-long professional development.

Students may include materials they feel best summarize the wealth of experiences they have during their clinical education. Although this is a certification and registration requirement, candidates do not need to submit the *Accomplishments Record* with their application. ARRT reserves the right to audit the *Accomplishments Record* for a period of five years following initial certification and registration.

Types of Documentation

The *Accomplishments Record* should contain evidence of self-assessment activities and continuing professional development pursuits. Specific ideas are suggested below; however, the student is not required to participate in each activity, nor is participation restricted to those listed. Documentation may be maintained electronically or on paper.

1. ***Examples of Self-Assessment Activities***
    a. Case Journals. These would not be comprehensive case studies, but rather case summaries noting questions or difficulties encountered during the case (e.g., unusual pathologies, ethical situations) and the strategies employed to resolve them. The journals may be of interest to colleagues or for future publications or research.
    b. Self-Assessments. These could be done periodically using forms contained in other sections of the Clinical Portfolio Requirements. Alternatively, checklists or other types of evaluation instruments might be utilized, with the goal of identifying activities already mastered and activities that require further training. It may be helpful to include strategies and resources found to be most or least effective.
2. ***Examples of Continuing Professional Development Activities***
    a. Presentations. A file including the presentation abstract, the length of time, and the audience.
    b. Papers and Publications. A file of papers the student has authored or coauthored, or participation in research projects.
    c. Community Service. The student may elect to document participation in activities such as public health initiatives, university service, and community support.
    d. Certificates of CE Attendance. Include documentation of attendance at conferences such as RSNA, AVIR, ASRT, or state and local conferences; include a brief summary for each educational activity, noting any benefits.
    e. Training/Skill Certificates. Document successful completion of activities such as ACLS, PICC, CPT/ICD-9 Coding, ECG, or phlebotomy.

Registered Radiologist Assistant (R.R.A.)
Component 3: Case Studies

To ensure that the student becomes proficient in the procedures identified in the R.R.A. Entry-Level Clinical Activities (ELCA), documentation of case studies is a component of the Clinical Portfolio. This is an opportunity to document cases encountered in daily work experience and to critically evaluate and reflect upon those clinical experiences. Cases demonstrating *typical* abnormalities or injuries should be selected for the case study requirement.

One case study from each of the 5 following categories is required:

1. GI and Chest (esophageal study; swallowing function study; upper GI study; small bowel study – small bowel study via enteroclysis tube; enema with barium, air, or water soluble contrast; nasogastric/enteric and orogastric/enteric tube placement; t-tube cholangiogram; defecography; chest fluoroscopy).
2. GU (antegrade urography; cystography or voiding cystourethrography; retrograde urethrography or urethrocystography; loopography; hysterosalpingography).
3. Invasive nonvascular; arthrogram, joint injection and aspiration; lumbar puncture myelography; lumbar puncture with contrast; thoracentesis; placement of catheter for pneumothorax; paracentesis; abscess, fistula, or sinus tract study; injection for sentinel node localization; breast needle localization; change of percutaneous tube or drainage catheter; thyroid biopsy; liver biopsy).
4. Invasive vascular (PICC placement; insertion on non-tunneled central venous catheter; insertion of tunneled central venous catheter; port injection; extremity venography).
5. CT post-processing; MR post-processing, or a case with unique ethical aspects.

Case studies should address the following areas:

- Etiology and epidemiology of disease or injury (cause, prevalence, incidence, and morbidity).
- Indications and reason for procedure; patient history; results of any prior diagnostic studies (e.g., lab values, physical assessments, imaging studies) as appropriate.
- A brief description of the procedure (e.g., how it was done, notable complicating factors).
- Patient care issues that arose and how they were addressed.
- Preliminary observations to radiologist and final diagnosis made by radiologist.
- Patient outcome, if known.

Case studies may be documented in a 1-3 page written narrative or with electronic media. Accompanying images are encouraged (remove patient identification). The case studies do not need to be submitted with the application, but must be kept by the student for five years after application date for possible audit.

Registered Radiologist Assistant (R.R.A.)
Component 4: Summative Evaluation Rating Scales

The purpose of this form is to obtain from the chief preceptor a final overall evaluation of the student's clinical skills as demonstrated during his or her preceptorship. The form should be completed by the chief preceptor during the final stages of the preceptorship and forwarded to the director of the educational program. The form must be signed by both the chief preceptor and program director.

The Summative Evaluation Rating Scales address five skill areas: (1) evaluation of medical information, (2) patient communication, (3) radiation safety, (4) professionalism, and (5) specific procedural skills. Each of these skill areas is defined below; the rating scales appear on the following pages. *To be eligible for certification and registration, the student must receive a rating of* ***three or higher*** *in each skill area*.

1. ***Evaluation of Medical Information*** includes skill in acquiring relevant medical information from patient records, prior diagnostic studies, the scientific literature, and other healthcare providers, and in evaluating this information and its applicability to the patient's needs. The R.R.A. candidate recognizes the benefits and potential limitations of various types of information (e.g., interview reports, lab values) and of the medical procedures included in the R.R.A. Entry-Level Clinical Activities (ELCA) document.

2. ***Patient Communication*** refers to the ability to establish rapport and maintain professional relationships with patients and families of various cultural backgrounds in a manner that preserves dignity and conveys respect. The R.R.A. demonstrates effective questioning strategies, listening and speaking skills, and applies nonverbal communication techniques as appropriate. Patient communication includes activities such as: explaining the procedure to the patient; assessing his or her ability to comply with the procedure; explaining benefits and risks; verifying consent; educating the patient about follow-up care and health maintenance; and evaluating patient outcomes.

3. ***Professionalism*** is reflected by the R.R.A.s commitment to ethical practice and continued quality improvement. Professionalism includes the development of professional relationships with peers and colleagues, involvement in professional development activities (e.g., CE, peer review), and demonstrating an appreciation for the context and systems in which healthcare is provided. The R.R.A. conducts his or her practice activities under appropriate levels of supervision, and respects the ethical and legal boundaries of his or her practice. The R.R.A. upholds the laws governing medical practice and radiologic technology in his or her state, practices in accordance with institutional policies, and contributes to the overall integrity of his or her institution.

4. ***Radiation Safety*** involves the application of knowledge of radiation biology and physics to everyday practice activities. The R.R.A. is conscientious about ensuring the safety of patients, family, staff, and self. Such activities include, but are not limited to, the proper use of shielding, thoughtful selection of exposure factors, and prudent use of imaging technique (e.g., pulsed fluoroscopy). The R.R.A. routinely monitors exposure and adheres to professional and regulatory standards.

5. ***Procedural Skills*** refers to the cognitive and psychomotor skills required to successfully complete radiologic procedures under appropriate supervision. Such skills include patient positioning, set-up of medical equipment, administration of contrast or medications, catheter insertion or placement, and use of fluoroscopy. Ratings are provided for four categories of radiologic procedures: GI/Chest, GU, invasive nonvascular, and invasive vascular.

Summative Evaluation Rating Scales

Name of Student _____ Preceptorship Start Date _____

Name of Educational Program _____ Preceptorship End Date _____

Chief Preceptor* _____ Date _____
signature after completing this form

Program Director* _____ Date _____
signature after reviewing this form

1. Evaluation of Medical Information

Incomplete evaluation of records and other information; inefficient use of time; does not independently determine what data to obtain or where; superficial knowledge of radiologic sciences; fails to apply information to decision making; does not recognize fallibility of certain types of data.	**Performance Standard** does not meet — meets — exceeds 1 2 3 4 5 6	Thorough evaluation of records and other information; autonomous in locating information; in-depth knowledge of radiologic sciences literature; understands how data may or may not apply to case at hand, while clearly recognizing potential limitations of that data.

2. Patient Communication

Fails to explain procedure in a manner that patient will understand; does not consider patient preferences or address patient concerns; neglects patient education needs; does not inspire patient confidence; unsystematic in patient follow-up.	**Performance Standard** does not meet — meets — exceeds 1 2 3 4 5 6	Explains procedure to patient in clear and understandable fashion; considerate of patient interests and preferences; identifies and addresses patient education needs; exhibits empathy and helps patient feel at ease; systematic in patient follow-up.

3. Professionalism

Does not participate in professional development or quality improvement; minimal benefit from peer review or supervision; lacks appreciation for the total healthcare system; shows little regard for legal, ethical and scope of practice issues; makes little or no contribution to integrity of department.	**Performance Standard** does not meet — meets — exceeds 1 2 3 4 5 6	Participates in and benefits from activities such as continuing education, peer review, and other professional interactions; appreciates intricacies of the healthcare system; understands and respects legal, ethical and scope of practice issues; contributes to overall integrity of department.

4. Radiation Safety

Limited knowledge of radiation biology and physics; unaware of or does not follow regulations; fails to take precautions to minimize dose to patient, self, or others (e.g., shielding, reproductive status, fluoro time).	**Performance Standard** does not meet — meets — exceeds 1 2 3 4 5 6	Demonstrates knowledge of radiation biology and physics; appreciates importance of and adheres to regulations; conscientious about minimizing dose to patient, self, and others (e.g., shielding, reproductive status, fluoro time).

* Complete next page before signing.

Summative Evaluation Rating Scales

5a. Procedural Skills: GI and Chest Studies

Lacks knowledge of contrast (indications, contraindications, administration); awkward or imprecise when positioning patients; minimal thought given to imaging technique; inattentive to patient physiologic status during procedure; accepts images of marginal quality; does not recognize need for additional imaging.	**Performance Standard** **does not meet** **meets** **exceeds** 1 2 3 4 5 6	Thorough knowledge of contrast (indications, contraindications, administration); positions patients carefully and precisely; thoughtful and decisive when determining imaging technique; monitors patient physiologic status during procedure; accepts only high quality images; evaluates images to determine need for additional study.

5b. Procedural Skills: GU Studies

Superficial knowledge of contrast (indications, contraindications, administration); awkward or imprecise when positioning patients; minimal thought given to imaging technique; inattentive to patient physiologic status during procedure; accepts images of marginal quality; does not recognize need for additional imaging.	**Performance Standard** **does not meet** **meets** **exceeds** 1 2 3 4 5 6	Thorough knowledge of contrast (indications, contraindications, administration); positions patients carefully and precisely; thoughtful and decisive when determining imaging technique; monitors patient physiologic status during procedure; accepts only high-quality images; evaluates images to determine need for additional study.

5c. Procedural Skills: Invasive Nonvascular Studies

Inattentive to demands of aseptic environment; superficial knowledge of contrast, anesthetics, or other medications; awkward when inserting or placing needle or catheter; little thought given to imaging technique; does not appreciate limitations of procedure; inattentive to patient physiologic status during procedure; accepts images of marginal quality; does not recognize need for additional imaging.	**Performance Standard** **does not meet** **meets** **exceeds** 1 2 3 4 5 6	Exercises caution in aseptic environment; thorough knowledge of contrast, anesthetics, and other medications; precisely inserts or places needle or catheter; thoughtful and decisive when determining imaging technique; appreciates limitations of procedure; monitors patient physiologic status during procedure; accepts only high-quality images; evaluates images to determine need for additional study.

5d. Procedural Skills: Invasive Vascular Studies

Inattentive to demands of aseptic environment; superficial knowledge of anesthetics or other medications; awkward when inserting or placing needle or catheter; little thought given to imaging technique; does not appreciate limitations of procedure; inattentive to patient physiologic status during procedure; accepts images of marginal quality; does not recognize need for additional imaging.	**Performance Standard** **does not meet** **meets** **exceeds** 1 2 3 4 5 6	Exercises caution in aseptic environment; thorough knowledge of anesthetics and other medications; precisely inserts or places needle or catheter; thoughtful and decisive when determining imaging technique; appreciates limitations of procedure; monitors patient physiologic status during procedure; accepts only high-quality images; evaluates images to determine need for additional study.

Glossary of Terms Related to Registered Radiologist Assistant Certification and Registration

***Application Packet**:* The packet includes the application form (with information on postmarking deadlines and fees) and clinical portfolio forms that must be submitted with the application along with instructions for completing the forms. Students should obtain and review the certification and registration application packet early in their educational program to assure that they meet all eligibility requirements during the course of the program.

***Cases**:* Number of repetitions of a procedure used to document clinical experience for each procedure required in the clinical portfolio.

***Case Studies**:* The third component of the clinical portfolio. It consists of documentation of original studies completed by the student. This documentation is not submitted with the certification and registration application, but must be maintained by the student and provided to ARRT if the student's records are selected for audit. Instructions for preparing case studies are included in the certification and registration application packet.

***Chief Preceptor**:* The radiologist designated as having primary responsibility for the individual student's clinical education and who has agreed to educate, assess clinical competence, and complete the documentation forms for clinical experience and competence for the student.

***Clinical Experience Documentation and Competence Assessments Forms**:* The first component of the clinical portfolio. These are actually a collection of forms that document the student's clinical experience and competence assessments. Form CR-1 summarizes the information. Forms CR-2A through CR-2E are assessment forms specific to GI/Chest, GU, invasive nonvascular, invasive vascular, and post-processing activities. These forms are submitted with the certification and registration application.

***Didactic and Clinical Portfolio Requirements**:* In addition to the didactic requirements, the portfolio includes four components that document the student's clinical education. The four components are: the Clinical Experience Documentation and Competence Assessment Forms; Professional Activities and Accomplishments Record; Case Studies; and Summative Evaluation Rating Scales.

***Direct Supervision**:* For direct supervision, the radiologist must be present in the office suite and immediately available to furnish assistance and direction throughout the performance of the procedure, but not required to be present in the room when the procedure is performed. This definition is based upon that of CMS.

***Elective Procedures**:* A list of procedures from which students must choose a certain number in which to demonstrate competence. Twenty-four elective procedures are identified in Component 1: Clinical Experience Documentation and Competence Assessments and candidates must select a minimum of three. A total of 125 repetitions of the elective procedures are required. Elective refers to choosing from among the procedures on the list.

***Entry-Level Clinical Activities (ELCA) document**:* Document developed by the ARRT with community input (including from the ASRT and ACR) that identifies a core set of activities that R.R.A.s should be qualified to perform at entry into the profession.

***Mandatory Procedures**:* Procedures for which students are required to demonstrate competence and to document completion of a set number of cases. Twelve mandatory procedures are identified in Component 1: Clinical Experience Documentation and Competence Assessments and candidates are given a minimum and a maximum number of cases to be documented. A minimum of 375 repetitions of the mandatory procedures are required.

***Medical Advisor**:* A radiologist who serves as a professional resource to the educational program to help assure that the medical components of the preceptorships meet acceptable standards. Must be ABR Diplomate or equivalent.

Post-Radiography Certification and Registration Experience*:* One year of experience is required post-radiography certification and registration and prior to certification and registration as a Registered Radiologist Assistant. The experience cannot be earned while performing the role of a radiologist assistant.

Preceptorship*:* Educational process in which a student learns in the clinical environment under the supervision of a radiologist.

Professional Activities and Accomplishments Record: The second component of the clinical portfolio. It consists of documentation of self-assessment activities and continuing education. This documentation is not submitted with the certification and registration application, but must be maintained by the student and provided to ARRT if the student's records are selected for audit.

Program Director*:* Person designated to manage and direct the educational program (including both the didactic and clinical educational components), develop contracts with preceptors, students, and institutions, monitor preceptorship activities, and complete final certification and registration application materials.

Repetitions*:* The number of times that a clinical procedure must be performed to satisfy the clinical experience requirement.

Summary of Clinical Experience and Competence Assessments (Form CR-1)*:* One of the forms included in the Clinical Experience Documentation and Competence Assessments Forms. The form summarizes the number of cases completed and competence assessment dates. It is submitted with the certification and registration application.

Summative Evaluation Rating Scales*:* The fourth component of the clinical portfolio. It consists of the final evaluation conducted by the chief preceptor. Both the chief preceptor and the program director sign the form. It is submitted with the certification and registration application.

Supervising Radiologist or Preceptor*:* Radiologist supervising the student during procedures. May also perform clinical assessments of the student. Typically within the same practice as the Chief Preceptor. Differs from the Chief Preceptor in that he or she does not have primary responsibility for the clinical education of the student. For some students, there may be only the Chief Preceptor working with the student. In other cases there may be one Chief Preceptor and multiple Preceptors.