Registered Radiologist Assistant

Introduction

Discussions among the American College of Radiology (ACR), the American Society of Radiologic Technologists (ASRT), and The American Registry of Radiologic Technologists (ARRT) culminated in 2003 with a consensus statement that defines the Registered Radiologist Assistant (R.R.A.) as an advanced-level radiographer who works under the supervision of a radiologist to promote high standards of patient care by assisting radiologists in the diagnostic imaging environment. Under radiologist supervision, the R.R.A. performs patient assessment, patient management, and selected clinical imaging procedures. Certification and registration as an R.R.A. does not qualify the R.R.A. to perform interpretations (preliminary, final, or otherwise) of any radiological examination.[1] The R.R.A. may make and communicate initial observations only to the radiologist.

The ARRT expanded this consensus definition to delineate more fully the entry-level role of a radiologist assistant and introduced the R.R.A. certification and registration program based upon a practice analysis in 2005. The R.R.A. program requirements include certification and registration in radiography (i.e., R.T.(R)(ARRT), experience as a radiographer, as well as radiologist assistant specific educational, ethics, and examination standards. Details are available on ARRT's website (www.arrt.org).

Purpose of this Document

In order to develop certification and registration standards, ARRT first identifies a core set of activities that individuals should be qualified to perform at entry into that role. The list of entry-level clinical activities is then used to create ARRT examination development and education requirements for certification and registration. The Entry-Level Clinical Activities (ELCA) is not intended as a scope of practice. Inclusion of activities in ELCA does not indicate that the activities may be legally performed in all states by those certified and registered nor that the activities, if performed, are eligible for reimbursement under current CMS regulations. State, institutional, and employer requirements should be consulted to determine the specific role allowed in an individual situation. Similarly, exclusion of activities from ELCA is not to be interpreted as prohibiting the performance of the activities provided that state, institutional, and employer requirements support the performance of the activities and that appropriate education, training, and competency assessment have been completed for the procedures. For all ARRT disciplines it is assumed that the requirements for certification and registration serve as the foundation for developing qualifications to perform additional procedures.

Initial Role Delineation Development

ARRT published the initial role delineation in 2005. It was developed based upon a survey of radiologists and radiology practitioner assistants (RPAs) conducted in early 2004. Radiologists were asked to rate clinical activities as to whether the activity could be performed by an appropriately prepared radiologist assistant and, if so, the suggested level of radiologist supervision. RPAs were asked to indicate if they performed the activities and, if so, the level of supervision they received.

An ARRT Advisory Committee composed of four radiologists, two R.R.A. educational program directors, two RPAs, one physicist, and organizational liaisons reviewed the survey responses. A draft description of the role of a radiologist assistant was produced. Additional refinements were made by the Advisory Committee based upon organizational and community feedback. The ARRT Board of Trustees adopted the *R.R.A. Role Delineation* in January 2005 and eligibility requirements and examination content specifications were developed based upon the Role Delineation and approved in June 2005. The Role Delineation document was later renamed ELCA.

[1] *ACR ASRT Joint Policy Statement - Radiologist Assistant: Roles and Responsibilities (2003).*

Updates to the R.R.A. Certification and Registration Program

ARRT's certification and registration requirements are periodically updated to incorporate changing practice patterns and expectations. Revisions to ELCA are first suggested by the ARRT committee members, which consists of a combination of ACR appointed radiologists, AAPM appointed physicists and ARRT appointed R.R.A.s and educators. Typically a draft survey is created by the committee members and reviewed by the Inter-Societal Commission on Radiologist Assistants (ICRA). ICRA is composed of representatives of ACR, ASRT, and ARRT along with the participation of representatives from the Society of Radiology Physician Extenders. Once approved, the survey is administered to Radiologist Extenders identified from ARRT's database, a sample of ACR radiologists, and radiologists who work with Radiologist Extenders. The survey results are reviewed by the ARRT committee members and ICRA to identify possible updates to ELCA. The ARRT Board of Trustees makes the final decision on changes to ELCA. This update process is repeated at least every five years and more frequently if needed.

Most Recent Practice Analysis

The most recent update cycle has been completed. Based on survey results, committee input, and feedback from ICRA, six new clinical activities were added to ELCA and two existing clinical activities were removed. Editorial changes were made and the ARRT Board of Trustee approved the document in January 2017 for July 2018 implementation. The *Content Specifications for the Registered Radiologist Assistant* and the *Didactic and Clinical Portfolio Requirements for Certification and Registration as a Registered Radiologist Assistant* are updated to reflect the changes to ELCA.

Conclusion

The clinical procedures included in ELCA reflect procedures performed by a significant percentage of radiologist extenders and which radiologists were generally comfortable delegating to an R.R.A. under their supervision. The survey identified many procedures that were being performed by some radiologist extenders, but not by a sufficient percentage to warrant inclusion in ELCA. Exclusion from this document is not intended to limit the procedures performed by an R.R.A. provided that appropriate education, training, and competency assessment have been documented for those procedures and provided that state, institutional, and employer requirements support the performance.

Radiologist supervision of R.R.A.-performed procedures is assumed. The ARRT test development and education requirements for certification and registration assume that the level of supervision for entry-level R.R.A.s will be at the direct level for clinical procedures. Direct supervision[2] is defined as the radiologist present in the radiology facility 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. The assumption of a specific level of supervision is intended to assist in the development of entry-level certification and registration requirements. The actual level of radiologist supervision for an R.R.A. in practice will depend upon the R.R.A.s experience as well as state, institutional, and employer requirements. Best practice for all exams requiring consent includes the radiologist meeting the patient.

It is expected that R.R.A.s who perform procedures other than those listed in ELCA will have received appropriate training and competency assessment on these procedures to assure patient safety and quality imaging. The additional clinical education and competence assessment should be documented within the individual R.R.A.s portfolio. All activities should be performed in compliance with state, institutional, and employer requirements.

[2]*This definition of direct supervision is based upon that of the Centers for Medicare & Medicaid Services (CMS).*

Clinical activities		**Content Categories** Legend: PC = Patient Care, S = Safety, P = Procedures
1.	Review the patient's medical record to verify the appropriateness of a specific exam or procedure and report significant findings to radiologist.	PC.1.D.
2.	Assist the radiologist in determining whether indications meet the ACR Appropriateness Criteria® when advising those who order examinations.	PC.1.D.
3.	Interview patient to obtain, verify, or update medical history.	PC.1.A.2.
4.	Explain procedure to patient or significant others, including a description of risks, benefits, alternatives, and follow-up.*	PC.1.D., PC.1.C.2., PC.1.C.2.C.
5.	Participate in obtaining informed consent.*	PC.1.A.2.
6.	Determine if patient has followed instructions in preparation for the exam (e.g., diet, premedications).	PC.1.C.2.A.2.
7.	Assess risk factors that may contraindicate the procedure (e.g., health history, medications, pregnancy, psychological indicators, alternative medicines). (Note: Must be reviewed with radiologist.)	PC.1.C., PC.1.D., PC.1.E.
8.	Perform and document a procedure-focused physical examination, analysis of data (e.g., signs and symptoms, laboratory values, significant abnormalities, vital signs) and reporting of findings to the supervising radiologist for the following systems or anatomical areas:	PC.1.F., PC.1.G., PC.1.L.
	a. abdominal	P.1.
	b. thoracic	P.2.A., P.2.C.
	c. cardiovascular	P.2.B.
	d. musculoskeletal	P.3.A.
	e. peripheral vascular	P.4.B.
	f. neurological	P.4.A.
	g. endocrine [separated from neurological]	P.3.B.
	h. breast and axillae	P.2.D.
9.	Monitor ECG and recognize abnormal rhythms.	P.2.B.2.B.
10.	Perform urinary catheterization.	PC.1.J.
11.	Perform venipuncture.	PC.1.H.1.
12.	Monitor IV therapy for flow rate and complications.	PC.1.H.2., PC.1.H.3.
13.	Participate in the administration of moderate/conscious/sedation.	PC.2.C.2.
14.	Observe and assess patients who have received moderate/conscious/sedation.	PC.2.C.2.
15.	Assess patient's vital signs and level of anxiety/pain and inform radiologist when appropriate.	PC.1.D., PC.1.E.,
16.	Recognize and respond to medical emergencies (e.g., drug reactions, cardiac arrest, hypoglycemia) and activate emergency response systems, including notification of the radiologist.	PC.1.F., PC.2.D.3.

* Patient must be able to communicate with the radiologist if he/she requests or if any questions arise that cannot be appropriately answered by the radiologist assistant.

	Clinical activities	**Content Categories** Legend: PC = Patient Care, S = Safety, P = Procedures
17.	Administer oxygen as prescribed.	PC.1.I.
18.	Operate a fixed/mobile fluoroscopic unit.	S.1.G.1.A.
19.	Document fluoroscopy time and radiation dose.	S.1.G.1.B.
20.	Explain effects and potential side effects to the patient of the pharmaceutical required for the examination.	PC.2.
21.	Administer contrast agents and radiopharmaceuticals as prescribed by the radiologist.	PC.2.D.
22.	Administer medications (EXCLUDING contrast agents and radiopharmaceuticals) as prescribed by the radiologist.	PC.2.
23.	Monitor patient for side effects or complications of the pharmaceutical.	PC.1.F., PC.1.K.1., PC.2.A.3., PC.2.A.3., PC.2.B., PC.2.C., PC.2.D.
24.	Advocate for patient radiation safety and protection:	
	a. assess the patient's radiation dose history	S.1.A.
	b. provide radiation procedure exposure and cumulative dose education	PC.1.A.2.C.5.
	c. recommend alternative procedures based on patient radiation dose	PC.1.D.1., S.1.B.
25.	Perform procedures in compliance with Standards of Care, facility and regulatory requirements, and ARRT Standards of Ethics.	PC.1.A., S.1.F.
26.	Perform the following GI and chest examinations and procedures including contrast media administration and operation of appropriate imaging equipment:	
	a. esophageal study	P.1.B.
	b. swallowing function study	P.1.B.
	c. upper GI study	P.1.B.
	d. post-operative study	P.1.B.
	e. small bowel study	P.1.B.
	f. enema with barium, air, or water soluble contrast	P.1.B.
	g. nasogastric/enteric and orogastric/enteric tube placement	P.1.B.
	h. t-tube cholangiogram	P.1.C.
	i. CT colonography	P.1.B.
	j. chest fluoroscopy	P.2.A.
27.	Perform the following GU examinations and procedures including contrast media administration and operation of appropriate imaging equipment:	
	a. antegrade urography through an existing catheter (e.g., nephrostography)	P.1.D.
	b. cystography, not voiding	P.1.D.
	c. retrograde urethrography or urethrocystography	P.1.D.

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d. voiding cystography/cystourethrography	P.1.D.
e. loopography through an existing catheter (neobladder study)	P.1.D.
f. hysterosalpingography - imaging only	P.1.E.
g. hysterosalpingography - procedure and imaging	P.1.E.
28. Perform the following invasive nonvascular procedures with image guidance including contrast media administration and needle or catheter placement:	
a. therapeutic bursa aspiration and/or injection	P.3.
b. diagnostic joint aspiration	P.3.
c. therapeutic joint injection	P.3.
d. arthrography (radiography, CT, and MR)	P.3.
1. shoulder	
2. elbow	
3. wrist	
4. hip	
5. knee	
6. ankle	
e. lumbar puncture	P.4.
f. lumbar puncture for myelography	P.4.
g. cervical, thoracic, or lumbar myelography – imaging only	P.4.
h. thoracentesis with or without catheter	P.2.C.
i. placement of catheter for pneumothorax	P.2.C.
j. paracentesis with or without catheter	P.1.A.
k. abscess, fistula, or sinus tract study	P.1.A.
l. injection for sentinel node localization	P.2.D.
m. breast needle localization	P.2.D.
n. percutaneous drainage with or without placement of catheter (excluding thoracentesis and paracentesis)	P.1.A,
o. change of percutaneous tube or drainage catheter	P.1.A.
p. biopsy	
1. thyroid biopsy	P.3.B.
2. superficial lymph node	P.4.B.
3. liver (random)	P.1.A.
29. Perform the following invasive vascular procedures with image guidance including contrast media administration and needle or catheter placement:	
a. peripheral insertion of central venous catheter (PICC) placement	P.2.B.
b. insertion of non-tunneled central venous catheter	P.2.A.
c. insertion of tunneled central venous catheter	P.2.A.

	Clinical activities	**Content Categories** Legend: PC = Patient Care, S = Safety, P = Procedures
	d. port injection	P.2.A.
	e. extremity venography	P.4.B.
30.	Perform CT post-processing.	S.1.G.2.
31.	Perform MR post-processing.	S.1.G.3.
32.	Evaluate images for completeness and diagnostic quality, and recommend additional images as required (general radiography, CT, and MR). (Note: Additional images only in the same modality such as additional CT cuts.)	P.
33.	Review imaging procedures, make initial observations, and communicate observations only to the radiologist.	P.
34.	Record initial observations of imaging procedures following radiologist approval.	PC.1.L.
35.	Communicate radiologist's report to appropriate health care provider consistent with the ACR Practice Parameter for Communication of Diagnostic Imaging Findings.	PC.1.D.
36.	Provide physician-prescribed pre- and post- care instructions to patients.	PC.1.
37.	Perform follow-up patient evaluation, and post-procedure care, and communicate findings to the radiologist.	PC.1.
38.	Document procedure and post-procedure evaluation in appropriate record.	PC.1.L.
39.	Document patient admission and/or discharge summary for review and co-signature by radiologist.	PC.B.D.
40.	Participate in quality improvement activities within radiology practice.	S.1.G.4.
41.	Assist with data collection and review for clinical trials or other research.	S.1.G.4.
42.	Assist the radiologist in presenting at multi-disciplinary conferences (e.g., tumor boards and case conferences).	PC.B.D.