Master of Science in Radiologic Sciences
Radiologist Assistant Program
Radiologist Preceptor Handbook

Midwestern State University
Robert D. & Carol Gunn College of Health Sciences and Human Services
Department of Radiologic Sciences

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INTRODUCTION

Welcome to Midwestern State University’s (MSU) Master of Science in Radiologic Sciences (MSRS) program. MSU offers the first discipline-specific MSRS degree of its kind in the United States with three areas of concentration: radiologic administration, radiologic education, and radiologist assistant (RA).

The MSRS program at MSU provides a specialized program of study that prepares imaging and radiologic sciences professionals to become leaders in the medical imaging profession. The program allows imaging and radiologic sciences professionals to earn a graduate degree in their discipline and to develop skills that will assist with career advancement within radiologic administration, radiologic education, and advanced clinical practice.

This handbook is designed to provide students with information concerning policies and procedures in the MSRS program at MSU. The information in this handbook is subject to change; the policies as written may be modified, superseded, or eliminated. Final approval and interpretation of policies and procedures will be made by the Chair and Graduate Coordinator of the Radiologic Sciences Department at MSU. Students will be notified of such changes through regular channels of communication. Students should also check the MSRS website for policy revisions and updates:

- Administration and Education Majors
- RA Majors

For general MSU policies, consult the MSU Student Handbook, and Graduate Catalog.

PROGRAM MISSION STATEMENT

The mission of the MSRS program is to:

- Prepare imaging and radiologic sciences professionals to be leaders in the areas of administration, education, and advanced clinical practice.
- Encourage education in addition to the MSRS degree.
- Develop professionalism through advanced scholarly productivity.
MIDWESTERN STATE UNIVERSITY

PROGRAM DESCRIPTION

Midwestern State University was the first educational institution in the United States to offer a discipline-specific graduate degree. Today, the MSRS program remains at the forefront of imaging and radiologic sciences education and offers three areas of concentration:

- Administration
- Education
- Radiologist Assistant (RA)

The specialized program of study is a hybrid format and allows working professionals to complete the degree in two years with minimal on-campus requirements. Although the majority of the course work is completed online, there are six required on-campus visits for administration and education majors and 10 required on-campus visits for RA majors. RA majors are also required to complete extensive clinical requirements.

Imaging and radiologic sciences professionals from across the United States and around the world are enrolled in the MSRS program at Midwestern State University and benefit from the diverse experiences of their colleagues. In addition, the MSRS faculty members have many combined years of experience in the field and are actively involved in the profession.

The MSRS program includes graduate level radiologic science core courses, track courses, and elective courses. RA majors also have clinical preceptorships. All students must successfully complete the core courses. Track courses offer advanced educational experiences in administrative, educational, or advanced clinical procedure areas.

Students need reliable access to computer technology including Internet and email services as well as standard word processing programs. Students can refer to MSU’s Distance Education guidelines for generic technology advice or contact MSU Faculty for technology recommendations specific to a particular course.

Radiologist Assistant (RA)

An RA enhances patient care by extending the capacity of the radiologist in the diagnostic imaging environment. The RA performs patient assessment, patient management, fluoroscopy, and other radiology procedures. This new healthcare professional also makes initial observations of diagnostic images with official interpretations and final written reports being provided by supervising radiologists (as defined by the American College of Radiology (ACR) Standard for Communication: Diagnostic Radiology).
ADMISSION REQUIREMENTS

All admission questions should be directed to the Graduate Coordinator. To be considered for program admission, applicants must meet the following criteria:

- Hold credentials in one of the medical imaging modalities or radiation therapy.
- Hold a BSRS or BSRT degree. Candidates who have appropriate credentials with other baccalaureate degrees will be considered on an individual basis.
- Satisfy the admission criteria for MSU.
- RA students must be credentialed in radiography, RT(R), and must have at least two years of working experience in radiography.

Admission applicants must:

- Complete an application to MSU,
- Complete an application to the MSRS program,
- Submit official transcripts from all colleges or universities attended to the Graduate School.
- Submit the Graduate Record Exam (GRE) score or equivalent to the Graduate School.

ADDITIONAL ADMISSION INFORMATION FOR RA MAJORS

RA students begin taking RA procedure courses and clinical courses in the summer semester. Before RA students can participate in any RA clinical course, they must have faculty approval and meet the following criteria. There are no exceptions to these requirements.

RA applicants must:

- Provide documentation of American Registry of Radiologic Technologists (ARRT) certification in radiography. While having a working knowledge of sectional anatomy, vascular procedures, and other imaging modalities is helpful, the RA curriculum is based on general diagnostic radiography clinical practice. Applicants must have a working knowledge of general diagnostic radiography procedures (current ARRT card – radiography).
- Provide documentation of two years of clinical experience within the previous 10 years (letters from appropriate employers/human resource departments).
- Provide documentation of personal medical insurance (current insurance card).
- Pay for liability insurance. The RA program has a policy that covers RA clinical courses. Students will submit payment to the Radiologic Sciences Department Secretary for coverage before they begin clinical courses.
- Pass criminal background checks and drug screening.
- Be in compliance with Texas mandated immunizations.
• Provide documentation of current ACLS provider status (current ACLS card).
• Successfully complete RADS 5043 – Advanced Patient Assessment, Management, and Education. This course is offered during the spring semester and may be counted as an elective for administration or education majors who do not continue in the RA program.
• Provide documentation of the Radiologist Preceptor Agreement with the radiologist preceptor/group. Although one radiologist will be identified as the preceptor, it is better for students to develop an arrangement with a group of radiologists rather than an individual radiologist. The students, their preceptors, and the clinical facility need to be aware of the variety and quantity of procedures and the quantity of clinical hours required. The Preceptor Agreement must be approved and accepted by the MSU Faculty.
• Provide documentation of the Clinical Affiliation Agreement with the clinical facility. The students, their preceptors, and the clinical facility need to be aware of the variety and quantity of procedures and the quantity of clinical hours required. The Clinical Facility Agreement must be approved and accepted by the MSU Faculty.
• Have MSU Faculty approval following an interview.

The MSU RA program reserves the right to adjust its degree requirements to ensure safe professional practice and to satisfy the ARRT eligibility requirements for certification.

ANTI-DISCRIMINATION STATEMENT

The MSRS program, as a part of MSU, is an equal opportunity/affirmative action entity that complies with all federal and Texas laws, regulations, and executive orders regarding affirmative action requirements in all programs and policies. The MSRS program does not discriminate against any individual because of age, race, creed, color, sex, national origin, or handicap.

SPECIAL NEEDS

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Support Services in Room 168 of the Clark Student Center, (940) 397-4140.
CLINICAL PRECEPTORSHIPS

RA clinical sites are located in a wide geographic area and are arranged by the students. Students are responsible for their own transportation, housing, and living expenses during their clinical courses. Additionally, students must also arrange to have Internet access.

**RA students MUST always have a radiologist preceptor willing to conduct their clinical education.** If an RA student loses his/her radiologist preceptor, the student must notify the MSU RA Clinical Coordinator immediately. Clinical education is suspended until a suitable radiologist preceptor is established for the student.

*If the loss of a radiologist preceptor is based on unacceptable, intolerable, or illegal actions by a student which violate the clinical policies set forth in this Program Handbook or which violate any local, state, or federal laws, the student will be removed from the clinical site and released from the MSU RA Program. Under these circumstances, a student will not be allowed to reenter the RA Program at any time in the future.*

CLINICAL ATTENDANCE

Students must document clinical contact hours working with their radiologist preceptors during clinical courses. More specific requirements about clinical attendance will be provided in the clinical course syllabi. RA Major clinical competencies meet or exceed the required clinical competencies set by the ARRT.

At least five semesters in the RA Major include clinical preceptorships with at least 24 contact hours per week including at least four hours a week of direct image review with the radiologist preceptor. The program currently requires about 1440 total clinical contact hours.

- First Summer Semester = 216 clinical contact hours
- First Fall Semester = 336
- First Spring Semester = 336
- Second Summer Semester = 216
- Second Fall Semester = 336

Because all RA students are experienced healthcare professionals, in cases of severe weather conditions, they should use their own judgment about attending clinical. RA students and radiologist preceptors should have an established system of communication for such situations. The students should inform the MSU RA Clinical Coordinator as soon as possible of any missed clinical time.

REQUIRED VS. ELECTIVE CLINICAL COMPETENCIES

Students are encouraged to participate fully in all procedures during clinical experiences. Radiologist preceptors must verify clinical competence for each required clinical competency identified by the program. Additionally, the radiologist preceptors must verify clinical competence for elective procedures. Elective clinical competencies will vary from student to student depending on the setting and clinical focus.
By the completion of the program, students must demonstrate competence in all required and elective procedure competencies.

**COMPETENCY/PROFICIENCY**

Students will operate under the supervision of the radiologist preceptors until the radiologists determine **competency** is achieved. Clinical competence means the radiologist preceptors are satisfied that the students can perform the procedures or functions independently. Students must document their clinical competency with the Clinical Competency Evaluation Form.

Students must document their clinical **proficiency** through continued and repeated competence with procedures. This will be documented in the clinical portfolio.

**RADIOLOGIST PRECEPTOR RESPONSIBILITIES**

During clinical experiences, RA students are always under the supervision of radiologist preceptors who determine the capacity of the students to perform any specific functions. Under radiologist supervision, the RA students will perform patient assessment, patient management, and selected clinical imaging procedures. Radiologist preceptors are responsible for the safe practice of the RA students.

_The clinical activities required by MSU will be updated as needed to comply with or exceed the ARRT certification standards._

Individual state and/or institutional regulations and policies may place additional limitations on the activities and responsibilities authorized for a RA student in a given clinical setting.

Radiologist preceptors are responsible for the RA students’ clinical experiences. They will teach students patient management skills, procedures, and image observations to meet the requirements of the RA program. The required clinical competencies are based in general diagnostic radiography. They may also teach students additional skills as needed. They will work directly with students a minimum of 24 clinical hours each week as part of the clinical education course. This clinical time may be divided between patient management, procedures, and image observation. Preceptors will verify students are actively participating in all of their required clinical hours and will evaluate their clinical performance.

Radiologist preceptors will verify clinical competence using the Clinical Competency Evaluations, and evaluate the student’s professional development twice each semester. Radiologist preceptors will also verify final summative clinical documentation at the end of the program.

_In compliance with ARRT and MSU RA Program requirements, radiologists accept responsibility for the following when they agree to serve as Radiologist Preceptors for MSU RA students:_

- Provide input to the RA Program Advisory Committee to ensure program quality (Criterion 3.3)
• Sign a formal written agreement with the MSU RA Program. The agreement must include an authorizing signature from the group practice (Criterion 3.5.4)
• Commit the time and effort to assure the students receive the appropriate depth and scope of clinical education consistent with the ARRT’s Role Delineation (Criterion 3.6.2)
• Be willing and able to perform clinical competence assessments (Criterion 3.6.3)
• Complete the documentation of clinical experience and competence required by the ARRT and the MSU RA Program (Criterion 3.6.4)
• Work with the MSU RA Program officials, including the Medical Advisor, to ensure that the medical components of the clinical preceptorship meet acceptable standards (Criterion 3.6.5)
• Verify that clinical activities emphasize the education of the student rather than focus on the productivity of the department (Criterion 3.8.1)
• Commit the minimum number of clinical contact hours with the students required by the program to meet the ARRT and MSU RA Program clinical education requirements (Criterion 3.8.2)
• Commit to the duration of the clinical preceptorship to meet the ARRT and MSU RA Program clinical education requirements (Criterion 3.8.3)

The overall goal of the clinical preceptorship is to meet the ARRT and MSU RA Program clinical education requirements within a period of five (5) semesters. If, however, RA students can not complete all the required clinical competencies within the five (5) semester nominal program length, the program has additional courses available so students can extend their enrollment to complete the program requirements.

TEACHING

Radiologist Preceptors are responsible for the RA students’ clinical experiences. They teach students patient management skills, procedures, and image observations to meet the requirements of the MSU RA program. The required clinical competencies are based in general diagnostic radiography. They may also teach students additional skills as needed. They will work directly with students a minimum of twenty-four (24) clinical hours each week as part of the clinical education course. This clinical time may be divided between patient management, procedures, and at least four (4) hours of direct image review. Preceptors will verify that students are actively participating in all their required clinical hours and will evaluate their clinical performance.

LEVEL OF SUPERVISION

During clinical experiences, RA students are always under the direct supervision of Radiologist Preceptors who determine the capacity of the students to perform any specific functions. Direct supervision 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. Under direct radiologist supervision, the RA students will perform patient assessment, patient management, and clinical imaging procedures. Best practice for all exams requiring consent includes the radiologist meeting the patient. Inclusion of clinical activities and educational requirements in the RA program does not indicate that all activities may be legally performed in all states nor that the activities, if performed, are eligible for reimbursement under current Centers for Medicare and Medicaid Services (CMS) regulations.
Individual state and/or institutional regulations and policies may place additional limitations on the activities and responsibilities authorized for an RA student in a given clinical setting.

1 This definition of direct supervision is based upon that of the CMS.

**CLINICAL DOCUMENTATION- RADIOLOGIST PRECEPTOR**

**FORM CR-1** ARRT Summary of Clinical Experience and Competence Assessments  
**FORM CR-2 (A-E)** ARRT Clinical Competence Assessments  
Clinical Experience Evaluations  
ARRT Summative Evaluation Rating Scales

**CLINICAL DOCUMENTATION COMPLETED BY THE RADIOLOGIST PRECEPTOR** – radiologist role noted by **bold italics**.

**Clinical Procedure Competency Evaluations** – **FORM CR-2 (A-E), FORM C**  
When an RA student feels competent to perform a procedure (at the supervision level indicated on the clinical competency checklist), he/she will request that the radiologist preceptor complete an ARRT Clinical Competency Evaluation (FORM CR2).

> After teaching the student and determining the student can safely attempt the clinical procedure, the radiologist preceptor will observe and evaluate the student as he/she attempts the clinical competency. The radiologist preceptor will interrupt the procedure being evaluated if a patient’s welfare is compromised and/or equipment welfare is questionable.

The MSU RA Clinical Coordinator has the final word in the acceptance or denial of clinical competencies. Competency evaluations must be submitted to the RA Clinical Coordinator and will contribute to the portfolio grade.

**ARRT CR-1 Form**  
This form is completed by the student as he/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.

The student records the number of cases completed for each mandatory and elective procedure he/she performs. The student records only the date the competency assessment was completed. **The preceptor and program director must verify and sign the bottom of Form CR-1**

**ARRT Summative Evaluation Rating Scales**  
The purpose of this form is to obtain from the radiologist 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 radiologist preceptor during the final stages of the preceptorship and included in the student’s final clinical portfolio. To be eligible for certification, the student must receive a rating of three or higher in each skill area.**
Clinical Experience Evaluation
RA students set clinical goals at the beginning of each semester. They evaluate their progress towards those goals at mid-semester and at the end of the semester. The narrative includes identification of the student’s progress meeting clinical goals for that semester, the clinical site’s strengths and weaknesses, and the student’s impressions of the overall clinical experience. Results from this evaluation will be used to help identify problem areas and seek improvements. Copies of the Clinical Experience Evaluation should be included in the clinical portfolio.

The radiologist preceptor evaluates students at the midpoint and end of each semester. These evaluations are sent directly to the MSU RA Clinical Coordinator. They constitute a portion of the clinical grade. Appropriate conduct is a broad category encompassing a number of considerations including: communication skills, professional and ethical behavior, technical ability and procedural skills, critical thinking skills, acceptance of criticism and willingness to learn, patient/management skills, patient safety/radiation protection practice, patient assessment and documentation, image observation skills, and overall achievement level. The radiologist preceptor may solicit comments from other radiology personnel concerning the students’ overall performance.

Clinical Portfolio
RA students submits clinical paperwork AND maintains the ARRT portfolio throughout the program.

Specific guidelines for the submitting clinical paperwork will be provided in the clinical course syllabi. This will include, but is not limited to, documentation such as Clinical Goals, Patient Log Sheets, Clinical Competency Evaluations, Clinical Experience Evaluation, Case Studies, Radiation Exposure, etc. It may also include photographs and other artifacts of the student’s clinical experience. The clinical paperwork will be submitted to the MSU RA Clinical Coordinator for grading at the end of each semester. The ARRT portfolio must be available and current upon request by the MSU RA Clinical Coordinator.

RA students must maintain all requested program summaries including: FORM CR-1 and ARRT Summative Evaluation Rating Scales

RA STUDENT RESPONSIBILITIES
The clinical environment for an RA student will present special challenges. Even though they are certified radiologic technologists, RA students are not expected to function as radiologic technologists during their clinical hours. RA clinical hours are dedicated to learning from the radiologist preceptors and mastering the skills necessary to function as an RA.

There is no standard MSU RA uniform. RA students should dress professionally and practically in accordance with their clinical environments. Any questions regarding appropriate clinical dress should be directed to the radiologist preceptor and the MSU RA Clinical Coordinator.

There is a commonly accepted progression in medically-related education. The first step is academic preparation. The assignments in the RA procedures courses and the on-campus seminar classes are designed to provide this component. RA students will have a minimum of 24 contact clinical hours each week to achieve the remaining steps. The next step is observation. The RA student should carefully observe the activities of the radiologist preceptor, especially those directly
related to the RA Clinical Competencies Checklist as well as the more subtle aspects of direct patient care. The third step is assisting the radiologist preceptor, working side by side for the patient’s safety. The fourth step is competency evaluation and documentation. At this point, the radiologist preceptor documents that the RA student can perform the specific clinical task competently at the supervision level specified on the checklist. The final step is performance maintenance. RA students are expected to show continued clinical competence by their willingness and ability to repeat previously documented clinical procedures.

RA students are responsible for maintaining all clinical course records including the clinical portfolio. They must communicate regularly with the radiologist preceptor and the MSU RA Clinical Coordinator about their clinical experiences.

**CLINICAL DOCUMENTATION - STUDENT**

FORM CR-1 ARRT Summary of Clinical Experience and Competence Assessments
FORM CR-2 (A-E) ARRT Clinical Competence Assessments
Patient Log Sheet
MSU Clinical Competency Worksheet
ARRT Summative Evaluation Rating Scales

**CLINICAL DOCUMENTATION COMPLETED BY THE RA STUDENTS** – student role noted by *bold italics.*

**Patient Log Sheet** –
*RA students must maintain a daily log of all examinations (assisted, and performed) in the Trajecsys student reporting system. The supervising radiologist, procedure performed, date, location, and 5 digits of the patient’s identification or exam number must be documented in the log sheet.*

**Clinical Procedure Competency Evaluations** – FORM CR-2 (A-E), MSU Clinical Competency Worksheet
*When an RA student feels competent to perform a procedure, he/she will request that the radiologist preceptor complete an ARRT Clinical Competency Evaluation (FORM CR2- (A-E)) and an MSU Clinical Competency Worksheet.*

After teaching the student and determining that the student can safely attempt the clinical procedure, the radiologist preceptor will observe and evaluate the student as he/she attempts the clinical competency. The radiologist preceptor will interrupt the procedure being evaluated if a patient’s welfare is compromised and/or equipment welfare is questionable.

The MSU RA Clinical Coordinator has the final word in the acceptance or denial of clinical competencies. Competency evaluations must be submitted to the instructor and will contribute to the portfolio grade.

**ARRT FORM CR-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 the radiologist on the mandatory and elective procedures.*

*The student records the number of cases completed for each mandatory and elective procedure he/she performs.*
The student records the date that the competency assessment was completed. Note that the actual competence assessments are completed by a radiologist using ARRT FORM CR-2 (A-E).

The radiologist preceptor and the MSU RA Program Director must verify and sign the bottom of FORM CR-1. This form is submitted to the ARRT at the time of application.

Clinical Experience Evaluation

RA students set clinical goals at the beginning of each semester. They evaluate their progress towards those goals at mid-semester and at the end of the semester. The narrative includes identification of the student’s progress meeting clinical goals for that semester, the clinical site’s strengths and weaknesses, and the student’s impressions of the overall clinical experience. Results from this evaluation will be used to help identify problem areas and seek improvements. Copies of the Clinical Experience Evaluation should be included in the clinical portfolio.

The radiologist preceptor evaluates students at the midpoint and end of each semester. These evaluations are sent directly to the MSU RA Clinical Coordinator. They constitute a portion of the clinical grade. Appropriate conduct is a broad category encompassing a number of considerations including communication skills, professional and ethical behavior, technical ability and procedural skills, critical thinking skills, acceptance of criticism and willingness to learn, patient/management skills, patient safety/radiation protection practice, patient assessment and documentation, image observation skills, and overall achievement level. The radiologist preceptor may solicit comments from other radiology personnel concerning the student’s overall performance.

Clinical Portfolio

RA students submits clinical paperwork AND maintains the ARRT portfolio throughout the program.

Specific guidelines for the submitting clinical paperwork will be provided in the clinical course syllabi. This will include, but is not limited to, documentation such as Clinical Goals, Patient Log Sheets, Clinical Competency Evaluations, Clinical Experience Evaluation, Case Studies, Self-Reported Radiation Exposure, etc. It may also include photographs and other artifacts of the student’s clinical experience. The clinical paperwork will be submitted to the MSU RA Clinical Coordinator for grading at the end of each semester. The ARRT portfolio must be available and current upon request by the MSU RA Clinical Coordinator.

RA students must maintain all requested program summaries including: FORM CR-1 and ARRT Summative Evaluation Rating Scales

ARRT Summative Evaluation Rating Scales

The purpose of this form is to obtain from the radiologist 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 radiologist preceptor during the final stages of the preceptorship and included in the student’s final clinical portfolio. To be eligible for certification, the student must receive a rating of three or higher in each skill area.
MSU RA CLINICAL COORDINATOR RESPONSIBILITIES
Clinical experiences are a component of clinical courses. The MSU RA Clinical Coordinator will coordinate any activities related to clinical rotations. This includes managing all clinical forms and the clinical portfolio. The MSU RA Clinical Coordinator will work with other RA Program Faculty to integrate clinical and didactic information each semester. The MSU RA Clinical Coordinator assigns clinical grades. Contact information will be included on the clinical course syllabus.

ILLNESS/INJURY DURING CLINICAL
RA students who are injured or become ill (unable to perform duties or contagious) prior to the start of a clinical shift should stay home and not go to the clinical site. He/she should contact the radiologist preceptor and the MSU RA Clinical Coordinator. If a RA student becomes ill at the clinical site, he/she should notify the radiologist preceptor before leaving the facility.

If a RA student is injured at the clinical site, he/she should contact the radiologist preceptor immediately and follow the clinical facility’s protocol for on-the-job accidents. This usually involves filing an incident report and being evaluated by a physician in the emergency room or one’s own physician. The hospital may not have any responsibility for payment of emergency room charges or any other charges incurred as a result of the injury so the decision to seek treatment is up to the student. The MSU RA Clinical Coordinator should be apprised of the situation as soon as possible.

RADIATION PROTECTION
It is the goal of this program to keep radiation exposure to students as low as reasonably achievable. NCRP Report # 102 will be used to establish maximum dose values.

The RA clinical coordinator will ensure a radiation monitor available for each student to wear during clinical hours. If a student performs radiographic procedures when not engaged in RA clinical education activities, the radiation monitor which is used for RA clinical education will not be used.

Students will wear their radiation monitor at collar level in front, outside of the protective apron, and will follow the storage policy and other related policies of the clinical site (radiation monitor should remain at site).

The RA clinical coordinator will supply the student with the monthly or quarterly radiation report to place in his/her clinical portfolio.

If a student receives an exposure over a 90-day period that exceeds 300 millirems, the MSU Radiation Safety Officer will conduct an investigation. Additional general rules concerning radiation monitor use are:

- Radiation monitors are to be worn any time a student is working at the clinical site;
- Radiation monitors should not be placed on or near TVs or heat-producing appliances;
- Radiation monitors should not be exposed to sunlight for an extended period of time or high temperatures such as in automobiles;
 Radiation monitors should not get wet;
 Radiation monitors should not be worn when the student is having medical or dental x-rays performed.

**RADIATION PROTECTION AND PREGNANCY**

- The RA student *may* inform the MSU RA Clinical Coordinator and the radiologist preceptor if she is pregnant. It is the RA student’s responsibility to inform the clinical site Radiation Safety Officer of her pregnancy so appropriate radiation protection measures can be taken.

**RA PROGRAM POLICIES**

*(In Alphabetical Order)*

**Advanced Cardiac Life Support (ACLS)**

ACLS issued by the American Heart Association, Red Cross, or American Health and Safety Institute must be completed before the student enters the program and must be current during all clinical experiences. A current copy of the student’s ACLS card must be kept in the student file. It is the student’s responsibility to keep this certification current. The card issued must cover the entire program enrollment (minimum five semesters). If a student’s ACLS certification expires during the time he/she is in clinical, the student must be re-certified in ACLS.

**Academic Standards**

Demonstrates mastery in various disciplines, before matriculation and after; as judged by faculty members, examinations, and other measurements of performance. Once a student matriculates at the MSU RA Program, levels of mastery are required in six broad areas of competency.

These six areas of competency are:

- Medical Knowledge
- Interpersonal and Communication Skills
- Patient Care
- Professionalism
- Practice-based Learning and Improvement
- Systems-based Practice

Academic Standards are addressed in detail in the MSU MSRS Program Handbook. Students with specific questions about academic performance requirements in a course should reference the course syllabus or contact the course instructors. Any student who has specific questions about performance requirements in a course should speak with the individual course instructor.
Background Check & Drug Screening Test

The MSRS RA Program is committed to ensuring public and professional trust and providing safe patient care. In order to meet this goal, background investigation, finger printing, and drug screening of students are required. Many of our clinical education settings require additional criminal background investigations of all employees and students. To comply with these requirements, accepted students will be asked to submit to these tests to ascertain the student’s suitability for clinical rotations.

Criminal Background Check

All students will be required to submit to a criminal background check facilitated by CastleBranch.com before clinical rotation. The background check will include, but is not limited to, a review of prior criminal records, review of nationwide sexual offender records, review of nationwide healthcare fraud and abuse records, review of the nationwide Patriot Act records, review of residency history, and Social Security verification. Students with any felonies on the criminal record will be ineligible for admission into the MSRS RA Program. The submission of any false information to MSRS RA program shall be cause for immediate dismissal. Students are responsible for the payment of the criminal background check. *The criminal background check included criminal records for the state of Texas; additional counties outside of Texas will be searched for an additional fee.

Drug Screening Test Policy

All students will be required to submit for 10 panel urine drug screening (cocaine, amphetamines, barbiturates, benzodiazepines, marijuana, opiates, phencyclidine, propoxyphene, methadone, and synthetic opiates) facilitated by CastleBranch.com Students may be required to s before clinical rotation and at any time in the program. The student will be responsible for payment of the screening test. If the student tests positive for any illegal substance, he/she will be withdrawn from the program immediately. Non-negative results will be processed further and may require additional testing. Additional drug screening will be at the student’s expense. Failure to pass drug screening will result in immediate dismissal from the program. The submission of any false information to MSRS RA program shall be cause for immediate dismissal.

This information will remain confidential and will only be viewed by the Raadiologist Assistant Clinical Coordinator or designee. Any criminal conviction which is found during the background investigation that may deem a student unsuitable for clinical rotations will be considered on a case by case basis. Additional information regarding the conviction may be required in order to make an informed decision. The background investigation will be made available to clinical education settings that require such. Individuals at the clinical education setting, who are authorized to make decisions regarding an individual’s eligibility to attend a setting, will inform the Program Chair if a student will be allowed to attend clinical at that setting. If an offense appears on the criminal background check that disqualifies the student from attending clinical experiences, the clinical site(s) will notify the program regarding any students’ disqualification for attending clinical at that site. The student will receive written notification. Students who receive notification of ineligibility and who wish to dispute the results of the background investigation may follow the Gunn College of Health Sciences and Human Services Grievance Procedure.

If a student has been convicted of a crime, including a felony, a gross misdemeanor, or a misdemeanor with the sole exception of speeding and parking violations, these must be reported to the American Registry of Radiologic Technologists (ARRT). All alcohol and/or drug related violations must be reported. All potential violations must be
investigated by the ARRT in order to determine eligibility. Individuals must file a pre-application with the ARRT in order to obtain a ruling of the impact of their eligibility for the examination. This pre-application may be submitted at any time either before or after entry into an accredited program. For pre-application contact the ARRT at:

ARRT
1225 Northland Dr.
St. Paul, MN 55120-1155
Tel: (651) 687.0048

Communicable Disease
Any student who suspects he/she may have been exposed to or contracted a communicable disease must notify the radiologist preceptor and the MSU RA Clinical Coordinator immediately. If a student has been exposed, appropriate action will be taken to ensure the health and well-being of the student, hospital patients and staff and fellow students.

Students are encouraged to make use of any protective devices available. Students must use surgical gloves and other protective or precautionary measures (consistent with institutional policies) for all procedures in which there may be contact with body fluids (urine, blood, excretion, saliva, etc.). Those students found not in compliance will come back to MSU for retraining on universal precautions for the first offense. Subsequent offenses will lead to a one day suspension for the second offense; a three day suspension for the third offense, and termination from the program for the fourth offense. Most contact will be with patients who have not yet been diagnosed, and therefore, the precautionary procedure of wearing gloves is of paramount importance. Students will use strict isolation techniques if the patient has been diagnosed as having a contagious disease. Students may not refuse to perform radiologic services for these patients.

If a student should be the carrier of a contagious disease, he/she must contact the radiologist preceptor and the MSU RA Clinical Coordinator immediately. A temporary suspension of training may be necessary for legal reasons and for the protection of the patients. In the event a student is barred from the clinical education center because of a communicable disease, the RA Program will work with the student to make up the missed clinical education with a minimum of lost time to the student.

Didactic Attendance
Because of the unique distance learning format for this program, students must be present for all on-campus class sessions each semester to receive a passing grade in any didactic course which includes on-campus hours. There are no exceptions to this policy. If MSU is closed on an on-campus seminar day because of severe weather, MSU Faculty will contact students with specific instructions. The RA program must have current contact information for all students.

Health/Medical Insurance
RA students are responsible for any personal injury that occurs at the university or hospital. Purchase of health/accident insurance is required. A copy of the student’s medical insurance information must be presented during orientation and will be kept in the student’s file. It is the student’s responsibility to keep this information current.
Any MSU student may purchase health insurance through the University. Contact Vinson Health Center for additional information, (940) 397.4231.

**Immunization Requirements**

By Texas state law, each RA student entering the clinical environment must have the currently required immunizations:

- MMR (measles, mumps, rubella)
- Tdap (tetanus/diphtheria/pertussis)
- Varicella (Chicken Pox)
- Hepatitis B
- Influenza
- Bacterial Meningitis (if under 22 years of age)
- TB (tuberculosis) screening

All required immunizations must be completed prior to the first clinical day. Students who have not completed their immunizations will **NOT** be allowed to participate in clinical until cleared. All immunization records will be submitted to CastleBranch.com for evaluation and compliance.

**Liability Insurance**

RA students must carry professional liability insurance during the clinical education phase of their training. These fees are to be paid annually to the Radiologic Sciences Department. The liability insurance is effective on the day clinical education begins and ends on the day the RA program is completed. The coverage is only valid during the students scheduled clinical hours and does not cover students when they are employed.

**Professional Conduct and Honesty**

Professional conduct and honesty are essential for radiologist assistants. The impression a student makes on the patients and others reflects not only upon the student, but on the RA Program and the University. The RA Program and the University will not tolerate unacceptable behavior in the classroom clinical setting or public events where students represent the RA Program or the University. Students are to abide by the ARRT Radiologic Science Professional Code of Ethics, especially regarding patient protection, patient confidentiality, and patient care.

Professional conduct includes, but is not limited to:

**Commitment to Excellence**

- Refrain from performing any professional service which requires competence that one does not possess or which is prohibited by law unless the situation morally dictates otherwise;
- Strive to exceed expectations at all times;
- Commit to life-long learning by taking responsibility for one’s own learning;
- Reflect on the adequacy of one’s knowledge, skill development, and personal barriers to accomplishing learning and growth;
- Take responsibility for learning in group settings by being present, prepared, and engaged;
• Strive for mastery learning appropriate for one’s level of training;
• Reflect with colleagues on the success of group work.

**Honesty and Integrity**
• Identify truthfully and accurately one’s credentials and professional status;
• Communicate appropriately in an honest and timely manner;
• Accurately represent actions and events;
• Avoid cheating, plagiarism, and misrepresentation of the truth;
• Reflect on one’s personal reaction to encounters with others and accepts responsibility for personal actions;
• Recognize and appropriately disclose and manage conflicts of interest;
• Be forthcoming with information; do not withhold and/or use information for power;
• Admit mistakes.

**Compassion**
• Recognize and respond to the fears, sufferings, and hopes of patients and their families;
• Assist colleagues in dealing with the challenges of professional work.

**Respect for Others**
• Respect confidentiality of patients;
• Recognize and respect personal and sexual boundaries;
• Avoid bias (e.g., gender, race, age, sexual orientation) in interactions with others;
• Articulate and embrace the many positive aspects of difference among people and demonstrates awareness of how such differences affect personal interactions;
• Demonstrate a commitment to resolving conflicts in a collegial manner;
• Show sensitivity and respect for the needs, feelings, ideas, and wishes of others in clinical and education settings;
• Demonstrate humility in interactions with others;
• Recognize that appropriate dress and appearance demonstrate respect for others and for the profession.

**Professional Responsibility**
• Be present and punctual for scheduled activities;
• Take responsibility to notify others for unavoidable absence or tardiness;
• Cope with the challenges, conflicts, and ambiguities inherent in professional work;
• Identify and appropriately deal with problematic behaviors of oneself and colleagues;
• Be cognizant of and adhere to the chain of command;
• Appropriately displace clinical responsibilities when personal needs demand it;
• Adhere to established professional codes of conduct;
• Practice according to accepted standards of care;
• Identify ethical issues in professional situations and act in an ethical manner;
• Regard as strictly confidential, all information concerning each patient and refrain from discussing this information with any unauthorized individual, including the patient.
Social Responsibility
- Understand and actively address the multiple social factors that threaten the health of patients;
- Actively work for appropriate social change to improve the health of populations;
- Model healthy behaviors.

Altruism
- Place the interests of others above self-interest;
- Be able to give up some personal needs to meet needs of patients.

Unprofessional conduct will NOT be tolerated and may result in a recommendation for dismissal from the RA Program.

Serious infractions can result in immediate dismissal from the RA Program. Any student under the influence of drugs or alcohol that impairs clear clinical decision-making and functioning in the classroom or clinical area will be recommended for immediate dismissal from the RA Program.

Technical Standards
The essential aptitudes and abilities allow RA students (and practicing RAs) to perform in the vast array of requisite ways summarized by the six areas of competency above.

Without the ability to demonstrate the essential capacities, students cannot fulfill the requirements of all the courses within the MSU RA Program. Meeting these academic and technical standards are required for a) matriculation (in so much as the abilities can reasonably be determined before matriculation), b) advancement toward candidacy, and c) graduation.

The listed standards are essential in meeting the core competencies as defined above by the MSU RA Program.

Students enrolled in the MSU RA Program must have capacities in five broad areas:
1. Perception/Observation
2. Communication
3. Motor/Tactile Function
4. Cognition
5. Professionalism

Perception/Observation
Students must perceive, by the use of senses and mental abilities, the presentation of information through:
- Small group discussions and presentations;
- Large group lectures;
- Online lectures;
- One-on-one interactions;
- Demonstrations;
- Laboratory experiences;
Students’ diagnostic skills will be lessened without the functional use of the senses of equilibrium, smell, hearing, and taste. Additionally, they must have sufficient exteroceptive sense (touch, pain, and temperature), sufficient proprioceptive sense (position, pressure, movement, stereognosis, and vibratory), and sufficient motor function to permit them to carry out these functions.

Communication
Students must skillfully communicate, both orally and in writing (in English), with faculty members, the healthcare team, patients, families, and other students to:
- Elicit information;
- Convey information;
- Clarify information;
- Create rapport;
- Develop therapeutic relationships;
- Work collaboratively.

Students must speak, hear, and observe patients in order to elicit information, describe changes in mood, and perceive nonverbal communications. Students must communicate effectively with patients, including speech, reading, and writing.

Motor/Tactile Function
Students must have sufficient motor function and tactile ability to:
- Attend and participate in classes, groups, and activities which are part of the curriculum;
- Examine patients (including observation, auscultation, palpation, percussion, and other diagnostic maneuvers);
- Conduct basic radiologic procedures and tests;
- Perform diagnostic/therapeutic procedures;
- Provide patient care appropriate to the circumstances;
- Function in a wide variety of patient care venues;
- Perform in a reasonably independent and competent way in potentially high speed/high demand environments;
- Stand, sit, push, pull, bend, lift, stoop, and perform other necessary functions to provide care to the patient.

Students must demonstrate coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.

Cognition
Students must demonstrate higher-level cognitive abilities, which include:
- Rational thought;
- Measurement;
• Calculation;
• Visual-spatial comprehension;
• Conceptualization;
• Analysis;
• Synthesis;
• Organization;
• Representation (oral, written, diagrammatic, three-dimensional);
• Memory;
• Application;
• Clinical reasoning;
• Ethical reasoning;
• Sound judgment.

Students must possess the above abilities to reach diagnostic and therapeutic judgments. They must also comprehend three-dimensional relationships and the spatial relationships of structures.

**Professionalism**

Students must consistently demonstrate the core attributes of professionalism. MSU has defined the following behaviors as indicators of professionalism. See MSU Professional Conduct and Honesty policy:

• Commitment to Excellence
• Honesty and Integrity
• Respect for Others
• Empathy and Compassion
• Professional Responsibility
• Social Responsibility
• Altruism

Students must possess the emotional health necessary for full utilization of their intellectual abilities, the exercise of sound judgment, the prompt completion of responsibilities attendant to the diagnosis and care of patients, and the development of mature, sensitive, and effective relationships with patients and co-workers. Students must tolerate physically taxing workloads and to function effectively under stress. They must adapt to changing environments, display flexibility, and learn to function in the face of uncertainties inherent in the clinical problems of many patients. They must have a high level of compassion for others, motivation to serve, integrity, and a consciousness of social values, and sufficient interpersonal skills to interact positively with people from all levels of society, all ethnic backgrounds, and all belief systems.

**Students with Disabilities**

It is the experience of the MSU RA Program that students with disabilities (as defined by Section 504 of the Rehabilitation Act and the Americans with Disabilities Act) are qualified to study and practice as a RA with the use of reasonable accommodations. To be qualified for admission to the MSU RA Program, individuals must meet the Programs Academic Standards and Standards of Capacity with our without reasonable accommodation. Accommodation is viewed as a means of assisting students with disabilities to meet essential standards by providing them with an equal
opportunity to participate in all aspects of each course (reasonable accommodation is not intended to guarantee that students will be successful in meeting course requirements).

Students needing clarification are encouraged to contact the MSU RA Program Director or Disability Support Services. Disability Support Services assessments are confidential, and it is the students’ responsibility to submit written documentation to the RA Program Director in a timely manner.

**Use of Auxiliary Aids and Intermediaries**
Students with documented disabilities are provided with accommodations at the Program, which may include involvement of an intermediary or auxiliary aid. No disability can be reasonably accommodated with an aid or intermediary that provides cognitive support, substitutes for essential clinical skills, or supplements clinical and ethical judgment. Thus, accommodations cannot eliminate essential program elements or fundamentally alter the RA program curriculum.
APPENDICES
## APPENDIX A

### COURSE SCHEDULE

**RADIOLOGIST ASSISTANT MAJORS – NONTHESIS OPTION**

<table>
<thead>
<tr>
<th>FALL START – COHORT A</th>
<th>SPRING START – COHORT B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FALL I (2 MSU campus visits)</strong></td>
<td>SPRING I (2 MSU campus visits)</td>
</tr>
<tr>
<td>RADS 5013 – Trends</td>
<td></td>
</tr>
<tr>
<td>RADS 5023 – Legal</td>
<td></td>
</tr>
<tr>
<td>SPRING I (0 MSU campus visits)</td>
<td>SPRING I (2 MSU campus visits)</td>
</tr>
<tr>
<td>RADS 5043 – Advanced Patient Assessment, Mgmt, and Ed</td>
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</tr>
<tr>
<td><strong>SUMMER I (1 MSU campus visit)</strong></td>
<td>SUMMER I (1 MSU campus visit)</td>
</tr>
<tr>
<td>RADS 5153 – RA Procedures I</td>
<td></td>
</tr>
<tr>
<td>RADS 5174 – Clinical I</td>
<td></td>
</tr>
<tr>
<td><strong>FALL II (2 MSU campus visits)</strong></td>
<td>FALL I (2 MSU campus visits)</td>
</tr>
<tr>
<td>RADS 5003 – Research</td>
<td></td>
</tr>
<tr>
<td>RADS 5253 – RA Procedures II</td>
<td></td>
</tr>
<tr>
<td>RADS 5274 – Clinical II</td>
<td></td>
</tr>
<tr>
<td><strong>SPRING II (2 MSU campus visits)</strong></td>
<td>SPRING II (2 MSU campus visits)</td>
</tr>
<tr>
<td>RADS 6773 – Research II</td>
<td></td>
</tr>
<tr>
<td>RADS 5353 – RA Procedures III</td>
<td></td>
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<tr>
<td>RADS 5374 – Clinical III</td>
<td></td>
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<tr>
<td><strong>SUMMER II (1 MSU campus visit)</strong></td>
<td>SUMMER II (1 MSU campus visit)</td>
</tr>
<tr>
<td>RADS 5453 – RA Procedures IV</td>
<td></td>
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<tr>
<td>RADS 5474 – Clinical IV</td>
<td></td>
</tr>
<tr>
<td><strong>FALL III (2 MSU campus visits)</strong></td>
<td>FALL II (2 MSU campus visits)</td>
</tr>
<tr>
<td>RADS 5033 – Leadership</td>
<td></td>
</tr>
<tr>
<td>RADS 5552 – Pharmacology and Clinical Decision-Making</td>
<td></td>
</tr>
<tr>
<td>RADS 5574 – Clinical V</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B

ARRT Summary of Clinical Experience and Competence Assessments (CR-1)

ARRT Clinical Competency Forms (CR-2 A-E)

ARRT Summative Evaluation Rating Scales

(ARRT forms may be updated at any time to reflect updates in the ARRT requirements)
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 candidate 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 40 procedures comprise the clinical experience and competence requirements for R.R.A. certification and registration. All candidates are required to perform 13 mandatory procedures for the specified minimum number of cases. In addition, candidates select a subset from the 27 elective procedures. The maximum number of mandatory and elective cases indicates the maximum reportable cases, not the maximum number a candidate 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 13 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 GI’s, 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 10 fistulograms, 25 extremity venograms, 20 port injections, 25 myelograms, 15 breast needle localizations, 15 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 16 assessment forms (13 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 candidate has completed a sufficient number of cases under appropriate instruction to acquire proficiency

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

It is expected that candidates will receive appropriate levels of supervision during the preceptorship. For additional information on supervision, refer to the ELGA 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 candidate 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 candidate records the number of cases completed for each mandatory and elective procedure he or she performs.
3. The candidate 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 candidate. There are separate evaluation forms for each class of radiologic procedures:
   - Form CR-2A: GI/Chest
   - Form CR-2B: GU
   - Form CR-2C: invasive nonvascular
   - Form CR-2D: invasive vascular
   - Form CR-2E: post-processing activities
2. The radiologist and candidate 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 candidate must submit a minimum total of 16 assessment forms to ARRT (13 mandatory and 3 elective procedures).
# Form CR-1

**Summary of Clinical Experience and Competence Assessments**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Experience Documentation</th>
<th>Minimum and Maximum Number of Repetitions</th>
<th>Actual Number Completed</th>
<th>Competence Assessment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastrointestinal and Chest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esophageal study – must fluoro and image the esophagus, may be with UGI</td>
<td>Mandatory</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Swallowing function study (participate in procedure and provide initial observations to radiologist)</td>
<td>Mandatory</td>
<td>10</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Upper GI study</td>
<td>Mandatory</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Small bowel study – direct the study and spot Tl</td>
<td>Mandatory</td>
<td>10</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>CT colonography</td>
<td>Elective</td>
<td>10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Enema with barium, air, or water soluble contrast</td>
<td>Mandatory</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Nasogastric/enteric or orogastric/enteric tube placement – may not require image guidance</td>
<td>Mandatory</td>
<td>10</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>T-tube cholangiogram</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Post-operative GI study</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Chest fluoroscopy</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Genitourinary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antegrade urography through existing tube (e.g., nephrostography)</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Cystography, voiding cystography, or voiding cystourethrography, with a minimum of 10 bladder catheterizations</td>
<td>Mandatory</td>
<td>15</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Retrograde urethrography or urethrocystography</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Loopography through existing tube</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Hysterosalpingography – imaging only</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Hysterosalpingography – procedure and imaging</td>
<td>Elective</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>Experience Documentation</td>
<td>Minimum and Maximum Number of Repetitions</td>
<td>Actual Number Completed</td>
<td>Competence Assessment Date</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
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<tr>
<td><strong>Invasive Nonvascular</strong></td>
<td></td>
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</tr>
<tr>
<td>Arthrogram with a minimum of 5 shoulder and 5 hip</td>
<td>Mandatory</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Therapeutic joint injection</td>
<td>Elective</td>
<td>10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Diagnostic joint aspiration</td>
<td>Elective</td>
<td>10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Therapeutic bursa aspiration and/or injection</td>
<td>Elective</td>
<td>10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Lumbar puncture with or without contrast</td>
<td>Mandatory</td>
<td>10</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Cervical, thoracic, or lumbar myelography – imaging only</td>
<td>Mandatory</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Thoracentesis with or without catheter</td>
<td>Mandatory</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Placement of catheter for pneumothorax</td>
<td>Elective</td>
<td>20</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Paracentesis with or without catheter</td>
<td>Mandatory</td>
<td>10</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Abscess, fistula, or sinus tract study</td>
<td>Elective</td>
<td>5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Injection for sentinel node localization</td>
<td>Elective</td>
<td>5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Breast needle localization</td>
<td>Elective</td>
<td>20</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Percutaneous drainage with or without placement of catheter (excluding paracentesis and thoracentesis)</td>
<td>Elective</td>
<td>15</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Change of percutaneous tube or drainage catheter</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Thyroid biopsy</td>
<td>Elective</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Superficial lymph node biopsy</td>
<td>Elective</td>
<td>10</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Liver biopsy (random)</td>
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<td>20</td>
<td>50</td>
<td></td>
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<tr>
<td><strong>Invasive Vascular</strong></td>
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<td></td>
</tr>
<tr>
<td>Peripherally inserted central catheter (PICC) placement</td>
<td>Mandatory</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Insertion of non-tunneled central venous catheter</td>
<td>Elective</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Insertion of tunneled central venous catheter</td>
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<td>50</td>
<td></td>
</tr>
<tr>
<td>Port injection</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Extremity venography</td>
<td>Elective</td>
<td>5</td>
<td>15</td>
<td></td>
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<td>Procedure</td>
<td>Experience Documentation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>------------------------</td>
<td>-------------------------</td>
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</tr>
<tr>
<td></td>
<td>Mandatory or Elective</td>
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<td></td>
<td>Min</td>
<td>Max</td>
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</tr>
<tr>
<td>Post-Processing</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform CT post-processing</td>
<td>Elective</td>
<td>5 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform MR post-processing</td>
<td>Elective</td>
<td>5 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number of Cases</td>
<td></td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Chief Preceptor Signature and Date**

**Program Director Signature and Date**

**Candidate 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 candidate has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the candidate must perform each clinical activity safely and effectively on a consistent basis.

Procedure: __________________________ Date Performed: __________________________

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>does not meet</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Overall Evaluation</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>does not meet</td>
</tr>
</tbody>
</table>

Radiologist Comments

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

Radiologist Signature __________________________ Date __________________________

Candidate 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 candidate has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the candidate must perform each clinical activity safely and effectively on a consistent basis.

Procedure: __________________ Date Performed: __________

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>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).</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Perform physical exam and evaluate lab studies as needed; report findings to the radiologist.</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Perform urinary catheterization, prepare and administer contrast agents prescribed by radiologist.</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Educate patient regarding follow-up care and verify comprehension.</td>
<td>☐ ☐ ☐</td>
</tr>
<tr>
<td>Document procedure and record exceptions from established protocol.</td>
<td>☐ ☐ ☐</td>
</tr>
</tbody>
</table>

Overall Evaluation

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

Radiologist Signature ________________________ Date __________

Candidate 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 candidate has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the candidate must perform each clinical activity safely and effectively on a consistent basis.

Procedure: ___________________ Date Performed: __________

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).</td>
<td></td>
</tr>
<tr>
<td>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).</td>
<td></td>
</tr>
<tr>
<td>Perform physical exam and evaluate lab studies as needed; report findings to the radiologist.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.</td>
<td></td>
</tr>
<tr>
<td>Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).</td>
<td></td>
</tr>
<tr>
<td>Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.</td>
<td></td>
</tr>
<tr>
<td>Educate patient regarding follow-up care and verify comprehension.</td>
<td></td>
</tr>
<tr>
<td>Document procedure and record exceptions from established protocol.</td>
<td></td>
</tr>
<tr>
<td>Overall Evaluation</td>
<td>does not meet</td>
</tr>
<tr>
<td>Radiologist Comments</td>
<td></td>
</tr>
<tr>
<td>(Note any particular strengths or areas for improvement for the candidate, or unusual features of the case that warrant consideration.)</td>
<td></td>
</tr>
<tr>
<td>Radiologist Signature</td>
<td>Date</td>
</tr>
<tr>
<td>Candidate Signature</td>
<td>Date</td>
</tr>
</tbody>
</table>
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 candidate has completed a sufficient number of cases to merit evaluation. To meet the required performance standard, the candidate must perform each clinical activity safely and effectively on a consistent basis.

### Procedure: ____________________________ Date Performed: ____________________________

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review patient record and other information to verify appropriateness of procedure. Assess patient for possible contraindications (e.g., history, medications, pregnancy, psychological status).</td>
<td>□ □ □</td>
</tr>
<tr>
<td>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).</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Perform physical exam and evaluate lab studies as needed; report findings to the radiologist</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Administer local anesthetic; select and insert needle or catheter to required location; administer contrast and guide catheter; maintain aseptic environment throughout procedure.</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Position patient; operate fluoro unit, modifying procedure as necessary; observe and evaluate structure and function; and document fluoroscopy time.</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Monitor patient status and respond as needed (e.g., discomfort, drug reactions, cardiac distress).</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Evaluate procedure for completeness and diagnostic quality; recommend additional images as required; communicate initial observations to the radiologist.</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Educate patient regarding follow-up care and verify comprehension.</td>
<td>□ □ □</td>
</tr>
<tr>
<td>Document procedure and record exceptions from established protocol.</td>
<td>□ □ □</td>
</tr>
</tbody>
</table>

**Overall Evaluation**

- □ does not meet
- □ meets
- □ exceeds

**Radiologist Comments**

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

__________________________________________

**Radiologist Signature** ____________________________ Date ____________________________

**Candidate Signature** ____________________________ Date ____________________________
Form CR-2E
Clinical Competence Assessment for Post-Processing Activities

(C T post-processing; MR post-processing)

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

Procedure: ___________________ Date Performed: ____________

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve image data from archive system.</td>
<td></td>
</tr>
<tr>
<td>Preview image data set.</td>
<td></td>
</tr>
<tr>
<td>Load image data set.</td>
<td></td>
</tr>
<tr>
<td>Display volume using MPR, MIP, SSD, VRT, or CPR.</td>
<td></td>
</tr>
<tr>
<td>Use segmentation or editing tools to remove obstructive anatomy.</td>
<td></td>
</tr>
<tr>
<td>Evaluate final images.</td>
<td></td>
</tr>
<tr>
<td>Use measuring tools (distance, ROI, percent of stenosis calculation).</td>
<td></td>
</tr>
<tr>
<td>Export images to server, secure web site, or report.</td>
<td></td>
</tr>
</tbody>
</table>

Overall Evaluation

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

Radiologist Signature ________________________ Date ________________________

Candidate Signature ________________________ Date ________________________
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 candidate'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 candidate 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 Candidate**

**Name of Educational Program**

**Chief Preceptor**

**Program Director**

**Preceptorship**

<table>
<thead>
<tr>
<th>Preceptorship Start Date</th>
<th>Preceptorship End Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
</table>

#### 1. Evaluation of Medical Information

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
<td>meets</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
<td>meets</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

Explains procedure to patient in clear and understandable fashion; considers 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

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
<td>meets</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
<td>meets</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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).

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

<table>
<thead>
<tr>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
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<tr>
<td>1</td>
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</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Performance Standard</th>
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<tbody>
<tr>
<td>does not meet</td>
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</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
</tr>
<tr>
<td>1</td>
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</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Performance Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>does not meet</td>
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<tr>
<td>1</td>
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</tbody>
</table>

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.

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.
APPENDIX C

ARRT Entry Level Clinical Activities & ARRT RRA Exam Contents Specifications

(ARRT Entry Level Clinical Activities & ARRT RRA Exam Contents Specifications may be changed at any time to reflect updates in ARRT requirements)
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.

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\(^7\) 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.

\(^7\)This definition of direct supervision is based upon that of the Centers for Medicare & Medicaid Services (CMS).
<table>
<thead>
<tr>
<th>Clinical activities</th>
<th>Content Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Review the patient’s medical record to verify the appropriateness of a specific exam or procedure and report significant findings to radiologist.</td>
<td>PC.1.D.</td>
</tr>
<tr>
<td>2. Assist the radiologist in determining whether indications meet the ACR Appropriateness Criteria® when advising those who order examinations.</td>
<td>PC.1.D.</td>
</tr>
<tr>
<td>3. Interview patient to obtain, verify, or update medical history.</td>
<td>PC.1.A.2.</td>
</tr>
<tr>
<td>4. Explain procedure to patient or significant others, including a description of risks, benefits, alternatives, and follow-up.*</td>
<td>PC.1.D., PC.1.C.2., PC.1.C.2.C.</td>
</tr>
<tr>
<td>6. Determine if patient has followed instructions in preparation for the exam (e.g., diet, premedications).</td>
<td>PC.1.C.2.A.2.</td>
</tr>
<tr>
<td>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.)</td>
<td>PC.1.C., PC.1.D., PC.1.E.</td>
</tr>
<tr>
<td>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:</td>
<td>PC.1.F., PC.1.G., PC.1.L.</td>
</tr>
<tr>
<td>a. abdominal</td>
<td>P.1.</td>
</tr>
<tr>
<td>b. thoracic</td>
<td>P.2.A., P.2.C.</td>
</tr>
<tr>
<td>c. cardiovascular</td>
<td>P.2.B.</td>
</tr>
<tr>
<td>d. musculoskeletal</td>
<td>P.3.A.</td>
</tr>
<tr>
<td>e. peripheral vascular</td>
<td>P.4.B.</td>
</tr>
<tr>
<td>f. neurological</td>
<td>P.4.A.</td>
</tr>
<tr>
<td>g. endocrine [separated from neurological]</td>
<td>P.3.B.</td>
</tr>
<tr>
<td>h. breast and axillae</td>
<td>P.2.D.</td>
</tr>
<tr>
<td>14. Observe and assess patients who have received moderate/conscious/sedation.</td>
<td>PC.2.C.2.</td>
</tr>
<tr>
<td>15. Assess patient’s vital signs and level of anxiety/pain and inform radiologist when appropriate.</td>
<td>PC.1.D., PC.1.E.,</td>
</tr>
<tr>
<td>16. Recognize and respond to medical emergencies (e.g., drug reactions, cardiac arrest, hypoglycemia) and activate emergency response systems, including notification of the radiologist.</td>
<td>PC.1.F., PC.2.D.3.</td>
</tr>
</tbody>
</table>

* 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

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Content Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Administer oxygen as prescribed.</td>
<td>PC.1.I.</td>
</tr>
<tr>
<td>18</td>
<td>Operate a fixed/mobile fluoroscopic unit.</td>
<td>S.1.G.1.A.</td>
</tr>
<tr>
<td>19</td>
<td>Document fluoroscopy time and radiation dose.</td>
<td>S.1.G.1.B.</td>
</tr>
<tr>
<td>20</td>
<td>Explain effects and potential side effects to the patient of the pharmaceutical required for the examination.</td>
<td>PC.2.</td>
</tr>
<tr>
<td>21</td>
<td>Administer contrast agents and radiopharmaceuticals as prescribed by the radiologist.</td>
<td>PC.2.D.</td>
</tr>
<tr>
<td>22</td>
<td>Administer medications (EXCLUDING contrast agents and radiopharmaceuticals) as prescribed by the radiologist.</td>
<td>PC.2.</td>
</tr>
<tr>
<td>24</td>
<td>Advocate for patient radiation safety and protection:</td>
<td>S.1.A.</td>
</tr>
<tr>
<td></td>
<td>b. provide radiation procedure exposure and cumulative dose education</td>
<td>PC.1.D.1., S.1.B.</td>
</tr>
<tr>
<td></td>
<td>c. recommend alternative procedures based on patient radiation dose</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Perform procedures in compliance with Standards of Care, facility and regulatory requirements, and ARRT Standards of Ethics.</td>
<td>PC.1.A., S.1.F.</td>
</tr>
<tr>
<td>26</td>
<td>Perform the following GI and chest examinations and procedures including contrast media administration and operation of appropriate imaging equipment:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. esophageal study</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>b. swallowing function study</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>c. upper GI study</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>d. post-operative study</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>e. small bowel study</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>f. enema with barium, air, or water soluble contrast</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>g. nasogastric/enteric and orogastric/enteric tube placement</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>h. T-tube cholangiogram</td>
<td>P.1.C.</td>
</tr>
<tr>
<td></td>
<td>i. CT colonography</td>
<td>P.1.B.</td>
</tr>
<tr>
<td></td>
<td>j. chest fluoroscopy</td>
<td>P.2.A.</td>
</tr>
<tr>
<td>27</td>
<td>Perform the following GU examinations and procedures including contrast media administration and operation of appropriate imaging equipment:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. antegrade urography through an existing catheter (e.g., nephrostomy)</td>
<td>P.1.D.</td>
</tr>
<tr>
<td></td>
<td>b. cystography, not voiding</td>
<td>P.1.D.</td>
</tr>
<tr>
<td></td>
<td>c. retrograde urethrography or urethrocystography</td>
<td>P.1.D.</td>
</tr>
</tbody>
</table>
**Clinical activities**

<table>
<thead>
<tr>
<th>Content Categories</th>
<th>Legend: PC = Patient Care, S = Safety, P = Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. voiding cystography/cystourethrography</td>
<td>P.1.D.</td>
</tr>
<tr>
<td>e. loopography through an existing catheter (neobladder study)</td>
<td>P.1.D.</td>
</tr>
<tr>
<td>f. hysterosalpingography - imaging only</td>
<td>P.1.E.</td>
</tr>
<tr>
<td>g. hysterosalpingography - procedure and imaging</td>
<td>P.1.E.</td>
</tr>
</tbody>
</table>

28. Perform the following invasive nonvascular procedures with image guidance including contrast media administration and needle or catheter placement:

<table>
<thead>
<tr>
<th>Content Categories</th>
<th>Legend: PC = Patient Care, S = Safety, P = Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. therapeutic bursa aspiration and/or injection</td>
<td>P.3.</td>
</tr>
<tr>
<td>b. diagnostic joint aspiration</td>
<td>P.3.</td>
</tr>
<tr>
<td>c. therapeutic joint injection</td>
<td>P.3.</td>
</tr>
<tr>
<td>d. arthrography (radiography, CT, and MR)</td>
<td>P.3.</td>
</tr>
<tr>
<td>1. shoulder</td>
<td></td>
</tr>
<tr>
<td>2. elbow</td>
<td></td>
</tr>
<tr>
<td>3. wrist</td>
<td></td>
</tr>
<tr>
<td>4. hip</td>
<td></td>
</tr>
<tr>
<td>5. knee</td>
<td></td>
</tr>
<tr>
<td>6. ankle</td>
<td></td>
</tr>
<tr>
<td>e. lumbar puncture</td>
<td>P.4.</td>
</tr>
<tr>
<td>f. lumbar puncture for myelography</td>
<td>P.4.</td>
</tr>
<tr>
<td>g. cervical, thoracic, or lumbar myelography - imaging only</td>
<td>P.4.</td>
</tr>
<tr>
<td>h. thoracentesis with or without catheter</td>
<td>P.2.C.</td>
</tr>
<tr>
<td>i. placement of catheter for pneumothorax</td>
<td>P.2.C.</td>
</tr>
<tr>
<td>j. paracentesis with or without catheter</td>
<td>P.1.A.</td>
</tr>
<tr>
<td>k. abscess, fistula, or sinus tract study</td>
<td>P.1.A.</td>
</tr>
<tr>
<td>l. injection for sentinel node localization</td>
<td>P.2.D.</td>
</tr>
<tr>
<td>m. breast needle localization</td>
<td>P.2.D.</td>
</tr>
<tr>
<td>n. percutaneous drainage with or without placement of catheter (excluding thoracentesis and paracentesis)</td>
<td>P.1.A.</td>
</tr>
<tr>
<td>o. change of percutaneous tube or drainage catheter</td>
<td>P.1.A.</td>
</tr>
<tr>
<td>p. biopsy</td>
<td>P.3.B.</td>
</tr>
<tr>
<td>1. thyroid biopsy</td>
<td>P.4.B.</td>
</tr>
<tr>
<td>2. superficial lymph node</td>
<td>P.4.B.</td>
</tr>
<tr>
<td>3. liver (random)</td>
<td>P.1.A.</td>
</tr>
</tbody>
</table>

29. Perform the following invasive vascular procedures with image guidance including contrast media administration and needle or catheter placement:

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

The purpose of the Registered Radiologist Assistant (R.R.A.) examination is to assess the knowledge and cognitive skills underlying the intelligent performance of the tasks typically required of Registered Radiologist Assistants at entry into the profession. The tasks typically performed were determined by administering a comprehensive practice analysis survey to a nationwide sample of radiologists and radiologist extenders. The Registered Radiologist Assistant Entry-Level Clinical Activities (ELCA) inventory may be found on the ARRT’s website (www.arrt.org).

The Examination Content Specifications for the Registered Radiologist Assistant identifies the knowledge areas underlying performance of the tasks on the Registered Radiologist Assistant Entry-Level Clinical Activities (ELCA) inventory. Every content category can be linked to one or more activities on the ELCA inventory.

The following table presents the major content categories and subcategories covered on the examination. The number of selected response test questions in each category are listed in bold and number of test questions in each subcategory in parentheses. Specific topics within each category are addressed in the content outline, which makes up the remaining pages of this document. In addition, the case study essay section of the examination requires candidates to respond to essay questions concerning the procedures listed in Attachment A, which can be found at the end of this document.

This document is not intended to serve as a curriculum guide. Although ARRT programs for certification and registration and educational programs may have related purposes, their functions are clearly different. Educational programs are generally broader in scope and address the subject matter that is included in these content specifications, but do not limit themselves to only this content.

<table>
<thead>
<tr>
<th>Content Categories</th>
<th>Selected Response Points</th>
<th>Case Study Points¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Management (34)</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Pharmacology (26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Safety, Radiation Protection and Equipment Operation (25)</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Procedures³</td>
<td></td>
<td>115</td>
</tr>
<tr>
<td>Abdominal Section (43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thoracic Section (29)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musculoskeletal and Endocrine Sections (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neurological, Vascular, and Lymphatic Sections (23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number⁴</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Testing Time Allowed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.5 hours</td>
<td>2.5 hours</td>
</tr>
</tbody>
</table>

¹ The examination contains two case studies from the list of procedures on Attachment A. Each case is followed by four to six essay questions worth 3 or 6 points each. A case may also include a few selected response questions (e.g., multiple choice). Refer to Overview of CBT at www.arrt.org for additional details.

² SI units will become the primary (principle) units of radiation measurement used on the R.R.A. examination in July, 2018.

³ The Procedures section includes patient assessment and pathophysiology. Procedures may also refer to appropriate imaging.

⁴ The exam includes an additional 20 unscored (pilot) questions.
Patient Care

1. Patient Management
   A. Ethics
      1. AHA Patient Care Partnership
         (Patient's Bill of Rights)
      2. informed consent and patient education
         a. patient competence
            1. cognitive impairment
            2. competence assessment
            3. mental status
            4. medication
         b. surrogate consent
            1. health care power of attorney
            2. family
         c. informed consent components
            1. explanation of procedure
            2. risk versus benefit
            3. alternatives and options to current procedure
            4. refusal of procedure and implications
            5. radiation exposure and cumulative dose education
         d. pre- and post-procedure care instructions
      3. definitions
         a. morals
         b. values
         c. ethics
   4. ASRT Practice Standards
   5. ARRT Standards of Ethics

B. Medical Law
   1. definitions
      a. negligence and malpractice
         1. gross
         2. contributing
      b. standard of care
      c. assault and battery
      d. false imprisonment
      e. slander and libel
      f. elements of tort law
   2. legal doctrines
      a. respondeat superior
      b. res ipsa loquitur
      c. foreseeability
      d. personal liability
      e. Good Samaritan Law

C. Patient Communication
   1. psychosocial support
      a. communication skills and issues
      b. cultural awareness
      c. social support structures
   2. patient interview
      a. verification
         1. patient identification and correct procedure
         2. patient preparation
         3. pregnancy status
      b. medical history
         1. chief complaint
         2. present illness
         3. past medical/surgical/ psychological history
         4. family history
         5. personal and social history
         6. review of systems
         7. medications (e.g., prescribed, OTC, natural)
         8. allergy history
   3. factors affecting communication
      a. speech, hearing and language ability
      b. cognitive disorders
      c. drug and/or alcohol effects

D. Medical Data Review
   1. indications for procedure (e.g., ACR Appropriateness Criteria®)
   2. contraindications for procedure
   3. laboratory values
   4. prior diagnostic studies
   5. current medications
   6. previous history (e.g., vital signs, nurses/physicians notes)
   7. assessment of vital signs, height, and weight
   8. disabilities

E. Psychological and Cognitive Status
   1. cognitive abilities
   2. emotional stability

* 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.

(Patient Care continues on the following page.)
Patient Care (continued)

F. Patient Monitoring and Assessment
   (prior to, during, and post-procedure)
   1. physical status
   2. emotional status
   3. cardiac and pulmonary monitoring
   4. medical emergencies
      a. cardiac arrest
      b. hyper/hypoglycemia
      c. seizure
      d. respiratory arrest
     e. shock
    f. stroke

G. Common Laboratory Tests, Analysis, and Significance
   1. CBC
   2. electrolytes (sodium, potassium, bicarbonate, chloride, calcium)
   3. pancreatic and cardiac enzymes
   4. albumin and total protein
   5. coagulation profile
   6. liver function
   7. renal function
   8. glucose
   9. culture and sensitivity
  10. cytology and histopathology

H. Infection Control
   1. sterile technique
   2. standard precautions (including mechanisms of disease transmission)

I. Intravenous Therapy
   1. venipuncture
   2. flow rate monitoring
   3. complications

J. Oxygen Therapy
   1. level (flow rate)
   2. devices
   3. indications and contraindications

K. Urinary Catheterization
   1. technique
   2. complications
   3. contraindications

L. Procedure Complications (Non-Contrast)
   1. infection
   2. hemorrhage
   3. pneumothorax
   4. perforation (GI or GU)
   5. respiratory distress
   6. aspiration
   7. vasovagal reaction
   8. pulmonary edema
   9. vascular injury or occlusion
  10. seizures
  11. pain
  12. neurologic deficit
  13. stroke
  14. cardiac arrest
  15. radiation injury
  16. physical injury
  17. death

M. Medical Records
   1. components of documentation
      a. types of documentation for patient chart
      b. electronic and paper records
      c. fluoroscopic and image documentation
   2. techniques and procedures for documentation
   3. document development and administration
      a. examination findings
      b. exceptions from established protocol or procedure
      c. patient's questions and concerns
      d. information regarding patient care, the procedure, and final outcome
      e. diagnostic/therapeutic procedure and patient data
      f. radiologists' reports to referring physician
      g. direct communication with referring physician
      h. discharge summary
      i. incident reports

(Patient Care continues on the following page.)
Patient Care (continued)

2. Pharmacology

A. Terminology
   1. regulations
      a. Food and Drug Administration (FDA)
      b. Drug Enforcement Agency (DEA)
      c. controlled substances
   2. identifying names
      a. generic
      b. trade
      c. United States Pharmacopoeia (USP)

3. drug characteristics
   a. actions
   b. synergisms
   c. side effects
   d. adverse reactions

4. dosage
   a. loading
   b. maintenance
   c. therapeutic dose
   d. lethal dose

5. safe dosage calculation
   a. ratio
   b. proportion
   c. pediatric
   d. geriatric

6. administration (e.g., oral, rectal, intravenous)

7. adverse event

B. General Medications: Classifications, Indications, and Contraindications

1. anti-infective drugs
   a. antibiotics
   b. antiviral
   c. antifungals

2. cardiovascular drugs
   a. antihypertensive
      1. calcium channel blockers
      2. beta blockers
      3. ACE inhibitors
   b. vasoconstrictors
   c. vasodilators
   d. anti-arrhythmics
   e. vascular drugs
      1. coagulation modifiers
      2. thrombolytics

3. gastrointestinal drugs
   a. anti-reflux agents
   b. hypomotility (glucagon)
   c. cholecystokinin (cholecystokinin)
   d. antiemetics

4. anti-inflammatory drugs
   a. analgesics
   b. nonsteroidal anti-inflammatory drugs (NSAIDs)
   c. corticosteroids

5. endocrine drugs
   a. diabetic medication
   b. anti-hypoglycemic (glucagon)
   c. insulin
   d. thyroid medications

6. diuretics

7. neurologic and psychotropic drugs
   a. anticonvulsants
   b. antiparkinsonians

(Patient Care continues on the following page.)
Patient Care (continued)

C. Anesthetics and Sedation
   1. local anesthetics²
      a. short acting
      b. long acting
   2. moderate sedation
      a. American Society of Anesthesiologists (ASA) definitions
      b. ASA guidelines
         1. history and physical
         2. intra-procedure
         3. post-procedure
         4. discharge scoring system
            a. motor activity
            b. respirations
            c. standing blood pressure
            d. consciousness
            e. oxygen saturation
      c. equipment
      d. medications²
         1. fentanyl
         2. morphine
         3. meperidine
         4. diazepam
         5. midazolam
         6. lorazepam
         7. naloxone
         8. flumazenil

D. Contrast Media (ACR Manual on Contrast Media)
   1. agents²
      a. negative contrast agents
      b. positive contrast agents
         1. barium sulfate
         2. iodinated contrast media
            a. osmolality
            b. molecular structure
      c. MRI agents
   2. contrast related complications
      a. nephrotoxicity
      b. NSF (nephrogenic systemic fibrosis)
      c. extravasation
      d. allergies
         1. allergy history
         2. types of reactions (mild to severe)
         3. premedications
            a. diphenhydramine
            b. corticosteroids
         4. anaphylaxis
   3. resuscitation
      a. life support
         1. basic life support (BLS)
         2. advanced cardiac life support (ACLS)
      b. basic drugs²
         1. epinephrine
         2. atropine
         3. bronchodilator
         4. nitroglycerine
         5. intravenous fluid

² Includes indications, contraindications, adverse reactions, dosage, routes of administration, and excretion process.
Safety

1. Patient Safety, Radiation Protection, and Equipment Operation

   A. Exposure and Dose
      1. exposure
      2. absorbed dose, equivalent dose, effective dose
      3. measurement and calculation of quantities (e.g., CTDI, DAP)
      4. high dose exams and modalities

   B. Safety Standards
      1. organizations and their roles
         a. Nuclear Regulatory Commission (NRC)
         b. Occupational Safety and Health Administration (OSHA)
         c. Environmental Protection Agency (EPA)
         d. Food and Drug Administration (FDA)
         e. International Commission on Radiological Protection (ICRP)
         f. National Council on Radiation Protection and Measurements (NCRP)
         g. state health departments
      2. monitoring and measuring
         a. personnel dosimetry
         b. environment
         c. devices
      3. effective dose limits
         a. NCRP reports
         b. ACR Appropriateness Criteria®

C. Methods to Reduce Patient Exposure
   1. intermittent fluoroscopy
   2. limitation of field size
   3. exposure factors (x ray and CT)
   4. geometry (e.g., SID, SSD, angulation)
   5. filtration of the x-ray beam
   6. protective shielding
   7. immobilization
   8. grid selection
   9. limitation of fluoroscopic time
  10. proper fluoroscope use
      a. last image hold
      b. cumulative timer
      c. magnification mode
      d. dose mode
         1. low dose
         2. cine
         3. high-level control
         4. pulsed
  11. pediatric considerations

D. Methods to Reduce Occupational Exposure (e.g., ALARA)
   1. time and location in radiation area
   2. shielding devices in x-ray rooms
   3. personal shielding devices
   4. proper fluoroscope use

E. Radiation Biology
   1. cell growth and division
   2. radiosensitivity of cells
      a. direct and indirect effects
      b. linear energy transfer (LET)
      c. relative biological effectiveness (RBE)
      d. oxygen enhancement ratio (OER)
      e. dose rate, fractionation, and protraction
   3. radiation effects
      a. deterministic and stochastic effects
      b. background radiation
      c. dose-response relationships
      d. skin effects
      e. acute radiation syndromes
      f. local tissue damage
      g. hematological effects
      h. carcinogenesis
      i. fetal effects
      j. genetic effects

(Safety continues on the following page.)
Safety (continued)

F. Regulations
1. Quality assurance management
   a. facility rules
   b. The Joint Commission requirements
2. Credentialing
   a. local or hospital requirements
   b. state licensing/registration regulations
   c. supervisory requirements
   d. professional standards
3. Government regulations
   a. Medical Practice Act – supervisory requirements
   b. Health Insurance Portability and Accountability Act (HIPAA)
   c. MQSA Act – personnel requirements

G. Equipment Operation
1. Fluoroscopy
   a. components
      1. x-ray tube
      2. image receptors
      3. collimators
      4. recording devices
         (e.g., digital cameras, cine)
      5. generator
      6. controls
      7. display
      8. automatic exposure rate control (AERC)
   b. static image storage
   c. dynamic image storage
   d. pulsed fluoroscopy
   e. high-level or boost mode
   f. exposure factors
   g. cumulative timer
2. Dose monitoring equipment

H. MRI Safety
1. Screening and education (patients, personnel, non-personnel)
   a. Biomedical implants
   b. Ferromagnetic foreign bodies
   c. Medical conditions
      (e.g., renal function, pregnancy)
   d. Prior diagnostic or surgical procedures
   e. Topical or externally applied items
      (e.g., tattoos, medication patches, body piercing jewelry, monitoring devices)
2. Equipment safety
   a. Ancillary equipment in proximity
   b. Designated safety zones

I. Quality Improvement and Research
1. Continuous quality improvement (CQI)
2. Statistics
   a. Measures of frequency
   b. Measures of central tendency
   c. Measures of variation
3. Clinical study design
4. Clinical trial phases
Procedures

Each section may include questions related to the following topics:
- Anatomy and Physiology: normal, age-related changes, and common surgical changes.
- Pathophysiology: alteration in function and structure related to disease/injury, compensation mechanisms, and congenital and developmental abnormalities.
- Patient Assessment.
- Procedures: patient and procedure preparation, consent (indications, contraindications, alternatives), performance, image evaluation and post-processing*, and post procedure outcomes assessment.

1. Abdominal Section
   A. General Abdomen
      1. anatomy and physiology
      2. assessment
         a. pre-procedure rectal exam
         b. signs and symptoms
      3. related procedures
         a. paracentesis
         b. abscess, fistula, or sinus tract study
         c. percutaneous drainage
         d. change of percutaneous tube or drainage catheter
         e. liver biopsy
      4. medical devices (image appearance, indications, purpose, appropriate location, and complications)
         a. drainage catheters
         b. peritoneal dialysis catheters
         c. stents
         d. umbilical vascular catheters
         e. IVC filter
      5. pathophysiology
         a. abdominal calcifications
         b. abdominal aortic aneurysm
         c. normal and abnormal gas patterns
         d. pneumatosis intestinalis
         e. portal venous gas
         f. peritonitis
         g. pneumoperitoneum
         h. abscess
         i. free fluid
   B. Gastrointestinal
      1. anatomy and physiology
      2. related procedures
         a. esophageal study
         b. swallowing function study
         c. upper GI study
         d. small bowel study
         e. enema with barium, air, or water soluble contrast
         f. postoperative GI study
         g. CT colonography
         h. nasogastric/enteric and orogastric/enteric tube placement
      3. medical devices (image appearance, indications, purpose, appropriate location, and complications)
         a. bariatric devices
         b. gastroenteric tubes

   (Procedures continues on the following page.)

*post-processing includes:

CT & MRI Image Post-Processing
- 3D reconstruction
- maximum intensity projection (MIP)
- multiplanar reconstruction (MPR)
- quantitative measurements (volume, distance, diameter)
- volume rendering

CT Post-Processing
- modifications to field of view (FOV)
- slice spacing
- algorithm
- cardiac analysis (calcium scoring and coronary artery mapping)
Procedures (continued)

4. pathophysiology - esophagus and stomach
   a. achalasia
   b. Barrett esophagus
   c. bezoar
   d. Crohn disease
   e. diverticula (Zenker, Killian-Jameson, epiphrenic)
   f. dysphagia
   g. esophagitis
   h. fistulae
   i. gastric outlet obstruction
   j. gastritis
   k. gastroesophageal reflux disease (GERD)
   l. gastroparesis
   m. hiatal hernias
   n. malignant and benign masses
   o. presbyesophagus
   p. primary muscular and neural disorders
   q. pyloric stenosis
   r. scleroderma
   s. surgical variation (Roux-en-Y, gastric band, Nissen fundoplication)
   t. ulcers
   u. varices
   v. volvulus
   w. webs

5. pathophysiology - small and large intestine
   a. adhesions
   b. appendicitis
   c. colitis
   d. constipation
   e. Crohn disease
   f. diverticulosis/diverticulitis
   g. duodenitis
   h. fistulae
   i. hernias
   j. Hirschsprung disease
   k. ileus
   l. infections
   m. inflammatory bowel syndrome
   n. inflammatory diseases
   o. intussusception
   p. ischemia
   q. malabsorption
   r. malignant and benign tumors (masses)
   s. Meckel diverticulum
   t. necrotizing enterocolitis
   u. malrotation
   v. obstruction
   w. peptic ulcer disease
   x. polyps
   y. superior mesenteric artery (SMA) syndrome
   z. toxic megacolon
   aa. volvulus

C. Hepatobiliary, Pancreas, and Spleen
   1. anatomy and physiology
   2. related procedure: t-tube choangiogram
   3. pathophysiology
      a. biliary calculi
      b. biliary dyskinesia
      c. cholangitis
      d. cholecystitis
      e. cirrhosis
      f. hepatic steatosis
      g. hepatitis
      h. liver failure
      i. malignant and benign masses
      j. pancreatic insufficiency
      k. pancreatic pseudocyst
      l. pancreatitis
      m. portal hypertension
      n. splenomegaly

D. Urinary
   1. anatomy and physiology
   2. related procedures
      a. antegrade urography (e.g., nephrostography)
      b. loopography (neobladder study)
      c. retrograde urethrography or urethrocystography
      d. voiding cystography/cystourethrogram
   3. medical devices (image appearance, indications, and purpose)
      a. urinary catheters
      b. nephrostomy tubes
      c. ureteral stents
   4. pathophysiology
      a. acute and chronic renal failure
      b. calculi
      c. glomerulonephritis and nephrotic syndrome
      d. infarcts, ischemia, thrombosis
      e. infectious and inflammatory processes
      f. malignant and benign masses
      g. nephrocalcinosis
      h. polycystic kidney disease
      i. renal papillary necrosis
      j. UPJ obstruction (congenital, adult)
      k. vesicoureteral reflux

(Procedures continues on the following page.)
Procedures (continued)

E. Reproductive
1. anatomy and physiology
2. related procedure: hysterosalpingography
3. pathophysiology
   a. female
      1. ectopic pregnancy
      2. endometriosis
      3. infertility
      4. malignant and benign masses
      5. pelvic inflammatory disease
      6. polycystic ovary disease
      7. pregnancy
   b. male
      1. benign prostatic hypertrophy
      2. hydrocele
      3. inflammatory processes
      4. malignant and benign masses
      5. testicular torsion
   4. medical devices (image appearance, indications, and purpose)
      a. penile implants
      b. pessary
      c. contraceptive devices

C. Pulmonary
1. anatomy and physiology
2. assessment:
   a. oxygen saturation measurement
3. signs and symptoms
4. related procedures
   a. thoracentesis
   b. placement of catheter for pneumothorax
5. medical devices (image appearance, indications, purpose, appropriate location, and complications)
   a. chest tubes
   b. tracheal tubes
6. pathophysiology
   a. adult respiratory distress syndrome (ARDS)
   b. asthma
   c. atelectasis
   d. bronchopulmonary dysplasia (BPD)
   e. chronic obstructive pulmonary disease (COPD)
   f. neonatal respiratory distress syndrome
   g. pleural diseases
   h. pleural effusions
   i. pneumothorax
   j. pulmonary edema
   k. pulmonary emboli
   l. pulmonary fibrosis
   m. pulmonary venous and arterial hypertension

(Procedures continues on the following page.)
Procedures (continued)

D. Breast and Axilla
1. anatomy and physiology
2. assessment
3. signs and symptoms
4. related procedures
   a. injection for sentinel node localization
   b. breast needle localization
   c. breast imaging - reporting and data system (BI-RADS)
5. medical devices (image appearance, indications, purpose, appropriate location, and complications): breast implants
6. pathophysiology
   a. benign and malignant masses
      1. cysts
      2. ductal carcinoma in situ
      3. fibroadenoma
      4. inflammatory breast cancers
      5. invasive ductal carcinoma
      6. invasive lobular carcinomas
   b. Paget disease
   c. phylloides
   d. inflammatory diseases

3. Musculoskeletal and Endocrine Sections

A. Musculoskeletal
1. anatomy and physiology
2. assessment
3. signs and symptoms
4. related procedures
   a. therapeutic bursa aspiration and/or injection
   b. diagnostic joint aspiration
   c. therapeutic joint injection
   d. arthrogram (radiography, CT, MRI)
      1. shoulder
      2. elbow
      3. wrist
      4. hip
      5. knee
      6. ankle
5. medical devices (image appearance, indications, purpose): orthopedic hardware

6. pathophysiology
   a. arthritis
      1. gout
      2. osteoarthritis
      3. rheumatoid arthritis
      4. ankylosing spondylitis
      5. psoriatic arthritis
      6. septic arthritis
   b. bursitis
   c. trauma
      1. fractures
      2. dislocations
      3. associated soft tissue injuries
   d. tumors
      1. chondrosarcoma
      2. enchondroma
      3. Ewing sarcoma
      4. metastatic disease
      5. multiple myeloma/plasmacytoma
      6. osteochondroma
      7. osteoid osteoma
      8. osteosarcoma
   e. infections
      1. osteomyelitis
      2. soft tissue infection
   f. diseases
      1. fibrous dysplasia
      2. osteogenesis imperfecta
      3. osteomalacia
      4. osteoporosis
      5. Paget disease
      6. renal osteodystrophy

B. Endocrine
1. anatomy and physiology
2. related study: thyroid biopsy
3. pathophysiology
   a. adrenal disorders
   b. diabetes mellitus
   c. hyperparathyroidism
   d. pituitary disorders
   e. renovascular hypertension
   f. thyroid disorders
      1. malignant and benign masses
      2. hypo and hyperthyroidism
      3. inflammatory

(Procedures continues on the following page.)
Procedures (continued)

4. Neurological, Vascular, and Lymphatic Sections

A. Neurological
   1. anatomy and physiology
   2. assessment
   3. signs and symptoms
   4. related procedures
      a. lumbar puncture
      b. myelogram
         1. cervical
         2. thoracic
         3. lumbar
   5. medical devices
      a. image appearance, indications, and purpose
         1. CSF shunts
         2. intrathecal catheters
         3. neuro stimulator's
         4. embolization devices
   6. pathophysiology
      a. amyotrophic lateral sclerosis (ALS)
      b. cerebrovascular accident (CVA)
      c. dementia (e.g., Alzheimer disease)
      d. herniated disc
      e. hydrocephalus
      f. increased intracranial pressure
      g. infection/inflammation
      h. malignant and benign masses
      i. multiple sclerosis (MS)
      j. myasthenia gravis
      k. normal pressure hydrocephalus (NPH)
      l. open and closed head injuries
      m. Parkinson disease
      n. pseudotumor cerebri
      o. seizures
      p. spinal cord injury
      q. syrinx
      r. tethered cord
      s. Chiari malformation

B. Vascular and Lymphatic
   1. anatomy and physiology
   2. assessment
   3. signs and symptoms of arterial occlusion and insufficiency
   4. signs and symptoms of venous obstruction and insufficiency
   5. related procedures
      a. extremity venography
      b. superficial lymph node biopsy
      c. insertion of non-tunneled central venous catheter
      d. insertion of tunneled central venous catheter
      e. port injection
      f. peripherally inserted central catheter (PICC) placement
   6. medical devices
      a. catheters
      b. stents
      c. embolization devices
      d. IVC filters
   7. pathophysiology
      a. anemias
      b. aneurysm
      c. dissection
      d. arterial venous malformations (AVM)
      e. arteriosclerosis/atherosclerosis
      f. blood clotting disorders
      g. infectious or inflammatory lymphadenopathy (e.g., cat scratch disease)
      h. coarctation of aorta
      i. hypertension
      j. leukemias
      k. lymphedema
      l. lymphomas
      m. shock
      n. venous insufficiency
      o. deep vein thrombosis
Attachment A

Two of the following 13 procedures (identified as mandatory on Form CR-1 Summary of Clinical Experience and Competence Assessments) will be included in the Case Study Essay Section of the Examination

Abdominal Procedures

General Abdomen

1. Paracentesis

Gastrointestinal

2. Esophageal study
3. Swallowing function study
4. Upper GI study
5. Small bowel study
6. Enema with barium, air, or water soluble contrast
7. Nasogastric/enteric or orogastric/enteric tube placement

Urinary

8. Cystography, voiding cystography or voiding cystourethrography

Thoracic Procedures

Pulmonary

9. Thoracentesis

Musculoskeletal and Endocrine Procedures

Musculoskeletal

10. Arthrogram (shoulder or hip)

Neurological, Vascular, and Lymphatic Procedures

Neurological

11. Lumbar puncture with or without contrast
12. Cervical, thoracic, or lumbar myelography – imaging only

Vascular and Lymphatic

13. Peripherally inserted central catheter (PICC) placement
MEMORANDUM OF AGREEMENT
RADIOLOGIST ASSISTANT PROGRAM
MIDWESTERN STATE UNIVERSITY
RADIOLOGIC SCIENCES

1. SUBJECT: Affiliation agreement between __________________________ (herein referred to as the Facility) and Midwestern State University (herein referred to as the University) in an educational program for Radiologist Assistants.

2. PURPOSE: The purpose of this affiliation is to provide educational experience to students which will prepare them to enter the field as a Radiologist Assistant.

3. OBJECTIVES: To provide a coordinated educational program leading to a Master of Science in Radiologic Sciences Degree.

4. UNDERSTANDING:
   a. The University will take continuous action to assure that the program is based on the current guidelines and curriculum set by the American Society of Radiologic Technologists.
   
   b. Master of Science in Radiologic Science Degree will be awarded by the University to each student who successfully completes the requirements of the program as outlined in the University catalog and Radiologist Assistant program.
   
   c. The selection of students for the program will be accomplished by the University. All students must meet the entrance requirements of the University prior to registration.
   
   d. Each student will be assigned to the Facility for clinical education and experience. The weekly hours, work center, and rotation will be specified by the program and Radiologist preceptor.
   
   e. The program director of the University will be responsible for supervising and coordinating all phases of the educational program.
   
   f. Students and University personnel will abide by existing rules and regulations of the Facility insofar as they may pertain to their activities while in the Facility.
   
   g. This agreement shall be effective upon signature by the parties concerned; automatically renewing each year, unless terminated by either institution by written notification to the other. Except under unusual conditions such notification will be submitted at least 120 days prior to the beginning of a semester PROVIDED, HOWEVER, that such termination shall
not affect students already enrolled in the program. Students currently in the program shall have an opportunity to complete the program at the Facility until they meet the requirements for graduation and certification.

5. RESPONSIBILITIES OF THE UNIVERSITY

The University Shall:

a. Establish measurable performance objectives for each clinical education course.
b. Maintain student records.
c. Prepare students academically.
d. Ensure that students carry liability insurance for the duration of the clinical training. The insurance will be blanket coverage of at least $1,000,000 each person/$3,000,000 each occurrence. The insurance carrier is Bill Beatty Insurance Agency, Inc., 13140 Coit Road, Suite 510, Dallas, Texas, 75240.

6. RESPONSIBILITIES OF THE FACILITY

The Facility Shall:

a. Cooperate with the University and Radiology group in concurrent and terminal evaluation of student as appropriate. Evaluations will be performed by University faculty and Radiology group members.

b. Not assume any liability responsibility for students’ personal injuries and/or student errors. Clinical errors made by students shall be documented using Facility incident report forms. Reports shall indicate that the error was made by a Radiologist Assistant student. The Radiologist preceptor will countersign the incident report and take responsibility for reporting error to appropriate authorities. The student is responsible for his or her own health insurance.

c. Make available to the students the appropriate clinical areas of the institution, including necessary equipment, electronic health records, and supplies.

d. Refer students with personal or health problems to the clinical coordinator.

e. Provide film badge service and radiation reports for students.

Signed: ___________________________ Date: _________________
Administrator
(Facility)
MIDWESTERN STATE UNIVERSITY

Signed: ___________________________  Date: _________________

Radiology Department Representative
(Facility)

Signed ___________________________  Date: _________________

Dr. James Johnston, PhD, RT(R)(CV)
Provost
Midwestern State University
APPENDIX E

Radiologist Preceptor Agreement (Sample)
RADIOLOGIST PRECEPTOR WRITTEN AGREEMENT
RADIOLOGIST ASSISTANT PROGRAM

I agree to serve as the Radiologist Preceptor without remuneration for
________________________________________________________________as he/she completes the
MSU Radiologist Assistant Master’s Degree.

I have reviewed the online MSU RA Program information and understand that the clinical component of
the program runs five (5) semesters (Summer-Fall-Spring-Summer-Fall). Students must take the RA
courses in the order indicated on the RA curriculum. Students are required to attend seminar classes on
the MSU campus twice each semester and must have reliable access to computers to complete online
course requirements throughout each semester. Students must meet all program requirements including
demonstrated competence in the specified number of General Diagnostic Clinical Competencies and the
specified number of Elective Clinical Competencies to successfully complete the program. Upon
completion of the program students will receive a Master of Science in Radiological Science degree for
the MSU RA Program.

I understand and accept that my responsibilities as Radiologist Preceptor include, but are not limited to:
• Teaching and guiding the RA student as he/she develops overall RA clinical skills.
• Supervising and overseeing all RA student interactions with patients.
• Teaching, evaluating, and documenting successful completion of the RA Clinical Competencies
  (Required and Elective) as identified by the MSU RA curriculum.
• Verifying that the RA student has at least twenty four (24) clinical contact hours per week to
develop RA clinical skills each semester.
• Maintaining communication with the MSU faculty about the progress of the RA student in the RA
program.

I understand that the student MUST have a Radiologist Preceptor to participate in the MSU Radiologist
Assistant Program. I understand the student will function under the affiliation and privileges extended to
the radiologist or radiology group by the facilities served.

If, for any reason, I cannot continue to serve as this student’s preceptor, I will immediately notify the MSU
RA program. I understand that the student must identify another radiologist willing to serve as Radiologist
Preceptor to remain in the MSU RA Program.

Signed,

________________________________________ / Date

______________________________
Printed Radiologist Name

______________________________
Authorizing Signature for Group Practice / Date
APPENDIX G

Radiologist Assistant Preceptor Handbook Acknowledgement Form

My signature below indicates that I have received the Radiologist Preceptor Handbook. I agree to abide by the policies and procedures outlined and understand that I am responsible for adhering to them.

_______________________________________
Radiologist Preceptor Signature

_______________________________________
Date
Midwestern State University
Department of Radiologic Sciences
3410 Taft Blvd
Wichita Falls, TX 76308
(866) 575.4305
(940) 397.4845 fax
radiology@msutexas.edu
www.msutexas.edu

Find the MSRS Program on social media:
@MidwesternMSRS
www.facebook.com/MidwesternMSRS