Medication Administration by Medical Imaging and Radiation Therapy Professionals

After a study of evidentiary documentation such as current literature, curricula, position statements, scopes of practice, laws, federal and state regulations and inquiries received by the American Society of Radiologic Technologists Governance Department, the American Society of Radiologic Technologists issued the opinions contained herein.

Accountability and Responsibility of Medical Imaging and Radiation Therapy Professionals

The profession holds medical imaging and radiation therapy professionals responsible and accountable for rendering safe, effective clinical services to patients and for judgments exercised and actions taken in the course of providing those services.

Acts that are within the recognized scope of practice for a given license or certification may be performed only by those individuals who possess the education and skill proficiency to perform those acts in a safe and effective manner.

The medical imaging and radiation therapy professional's performance should be consistent with state and federal laws, established standards of practice, facility policies and procedures, and be evidence-based.

Definitions

Adverse event: Any undesirable experience associated with the use of a medical product in a patient.

The following definitions can be found in the Glossary to The Practice Standards for Medical Imaging and Radiation Therapy:

Clinically competent
Educationally prepared
Licensed practitioner
Medication

Evidentiary Documentation

Current Literature

American College of Radiology. *ACR Accreditation Facility Toolkit. Policy and Procedure Checklist*. http://www.acraccreditation.org/~/media/ACRAccreditation/Documents/Site-Survey-Toolkit/Tool-Kit-for-Practice-Sites.pdf?la=en

American College of Radiology. *ACR Manual on Contrast Media, Version 10.* http://www.acr.org/quality-safety/resources/contrast-manual 2015.

American College of Radiology. *ACR Practice Guideline for Performing and Interpreting Magnetic Resonance Imaging.* http://www.acr.org/~/media/ACR/Documents/PGTS/guidelines/MRI.pdf 2014.

American College of Radiology. *ACR Practice Guideline for the Performance of Excretory Urography*. http://www.acr.org/~/media/ACR/Documents/PGTS/guidelines/Excretory_Urography.pdf. 2014.

American College of Radiology. *ACR Practice Guidelines for the Use of Intravascular Contrast Media*. http://www.acr.org/~/media/536212D711524DA5A4532407082C89BA.pdf. 2014.

American College of Radiology. *ACR-SNM Technical Standard for Diagnostic Procedures Using Radiopharmaceuticals*. http://www.acr.org/~/media/5E5C2C7CFD7C45959FC2BDD6E10AC315.pdf 2011

American Hospital Association. Transmittal 128. *CMS Manual System: Pub 100-02 Medicare Benefit Policy*. www.aha.org/content/00-10/R128BP.pdf. 2010, May 28.

Centers for Medicare & Medicaid Services. Chapter 15, Covered medical and other health services. *Medicare Benefit Policy Manual*. https://www.cms.gov/manuals/downloads/bp102c15.pdf. 2011, July 8.

(Quality of Evidence: High)

Curriculum

The ASRT curricula for all practice areas were reviewed.

2014 ASRT Cardiovascular Interventional and Vascular Interventional Curriculum
Pharmacology and Drug Administration Objectives, p. 89
Identified the basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medication and the appropriate delivery of patient care during medication administration.

2013 ASRT Computed Tomography Curriculum
Pharmacology and Venipuncture, p.68
Identified the basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2013 ASRT Mammography Curriculum
Pharmacology and Venipuncture, p.76
Identified the basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2015 ASRT Magnetic Resonance Curriculum

Pharmacology and Drug Administration, p. 65,
Sections I-VIII,
Identified the basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2014 ASRT Radiation Therapy Professional Curriculum

Radiation Therapy Patient Care, p.77,
Section VIII
Identified the basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2012 ASRT Radiography Curriculum,

Pharmacology and Venipuncture, p. 44,
Sections I-VIII
Identified the basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2015 ASRT Radiologist Assistant Curriculum

Pharmacology and Clinical Decision-Making in Imaging, p.11,
Sections I-XIII
Identified pharmaceuticals commonly used by and given to radiology patients, the intent of the drug and its effect on diseases, conditions and physiology and the radiologist assistant's role in administering medication and monitoring patients after medication administration.

Contrast Media, p.18,
Sections I-VII,
Identified the chemical makeup and physical properties of contrast agents and the radiologist assistant's role in administering contrast media and monitoring patients after medication administration.

Additional nationally recognized curricula were reviewed.

2008 National Education Curriculum for Sonography
Joint Review Committee on Education in Diagnostic Medical Sonography
NEC Part II (Common Curricula)
Patient Care Sections XI-XII
Identified intravenous injections, contraindications, adverse reactions, patient management, basic pharmacology and contrast materials.

Society of Nuclear Medicine and Molecular Imaging
2013 NMT Competency Based Curriculum Guide 5th Edition
Section 5, Patient Care – Competency 5.4.
IV. Routes of Administration.
V. Phlebotomy.

(Quality of evidence: High)

Certification Agency Content Specifications

The American Registry of Radiologic Technologists (ARRT) content specifications:
Cardiac-Interventional Radiography Category B, Section 3, a-b. Section 4, a-c. Section 6, a-c.
Computed Tomography Category A, Section 2, d. Section 3, a-g.
Magnetic Resonance Imaging Category A, Section 3, a-b, Category B, Section 1-6.
Nuclear Medicine Category B, Sections 2-3.
Radiation Therapy Category C, Section 1, c, Category E, Section 5.
Radiography. Category A, Section 1, d and g.
Registered Radiologist Assistant Category B, Sections 1-4.
Vascular-Interventional Radiography Category B, Section 4, a-d. Section 6, a-b.

Cardiovascular Credentialing International (CCI)
Examination Application and Overview, Registered Cardiovascular Invasive Specialist (RCIS) exam overview task list:
Section A, 3; Section B, 4.

Nuclear Medicine Technology Certification Board (NMTCB) components of preparedness:
Group III, Task #35, Content base 1-3.
Group IV, Task #42, Content base 1-4. Task #46, Content base 3-8. Task #47, Content base 3-7; Task #48, Content base 1-6.

(Quality of evidence: High)

Scopes of Practice and Practice Standards Reference
ASRT Practice Standards for Medical Imaging and Radiation Therapy.

Applies to all modality-specific scopes of practice except radiologist assistants, medical dosimetrists and limited x-ray machine operators.

Identifying, preparing and/or administering medications as prescribed by a licensed practitioner.

(Quality of evidence: High)

Federal and State Statute Reference(s)
Not applicable.

(Quality of evidence: not applicable)

Other
Not applicable.

(Quality of evidence: not applicable)

Advisory Opinion

It is the opinion of the American Society of Radiologic Technologists that based upon current literature, curricula set forth by the ASRT, Society of Nuclear Medicine and Molecular Imaging and the National Educational Curriculum for Sonography, certification examination specifications by the ARRT, NMTCB and CCI, recommendations by the American College of Radiology, American Hospital Association and Centers for Medicare & Medicaid Services and where federal or state law and/or institutional policy permits:

1. It is within the scope of practice for medical imaging and radiation therapy professionals to perform the parenteral administration of contrast media and other medications.
2. The parenteral administration of contrast media and other medications by medical imaging and radiation therapy professionals shall be performed only when a licensed practitioner is immediately available to ensure proper diagnosis and treatment of adverse events.

GRADE: Strong

Rationale

The ASRT's position is to determine the practice standards and scopes of practice for medical imaging and radiation therapy professionals. The practice standards' general stipulation emphasizes the importance of an individual being educationally prepared and clinically competent to practice in the profession of medical imaging and radiation therapy. With proper education and proven competence, the parenteral administration of contrast media and other medications by medical imaging and radiation therapy professionals provides quality patient services in a safe environment when a licensed practitioner is immediately available to ensure

proper diagnoses and treatment of possible adverse events.

Determining Scope of Practice

Each medical imaging and radiation therapy professional must exercise professional and prudent judgment in determining whether the performance of a given act is within the scope of practice for which the medical imaging and radiation therapy professional is licensed and, if applicable within the jurisdiction in which he/she is employed, educationally prepared and clinically competent to perform.

The ASRT issues advisory opinions as to what constitutes appropriate practice. As such, an opinion is not a regulation or statute and does not have the force and effect of law. It is issued as a guidepost to medical imaging and radiation therapy professionals who engage in safe practice. Federal and state laws, accreditation standards necessary to participate in government programs, and institutional policies and procedures supersede these standards. The individual must be educationally prepared and clinically competent as a prerequisite to professional practice.

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Amended, Main Motion, C-16.13, 2016
Amended, Main Motion, C-17.09, 2017
ASRT House of Delegates