



**American Society of Radiologic Technologists  
Twenty-eighth Session of the  
House of Delegates**

**Hyatt Regency  
Albuquerque, N.M.  
June 14-16, 2013**

# Twenty-eighth Session of the ASRT House of Delegates

Hyatt Regency  
Albuquerque, N.M.

June 14-16, 2013

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# Twenty-eighth Annual Meeting of the ASRT House of Delegates

Hyatt Regency  
Albuquerque, N.M.  
June 14-16, 2013

## First Business Meeting

### I. Call to Order

Speaker of the House Sandra Hayden called the 28th Annual Meeting of the ASRT House of Delegates to order at 1:32 p.m., Friday, June 14, 2013.

### II. Opening Ceremony

Speaker of the House Sandra Hayden appointed Liana Watson, ASRT Chief Governance and Development Officer, to take the minutes of the House meetings.

### III. Introductions

### IV. Delegate Orientation

Speaker of the House Sandra Hayden presented delegate orientation.

### V. Credentials Report

Vice Speaker Amanda Garlock-Corbin presented the Credentials Report. Out of a possible 170 delegates, 147 were credentialed as follows:

Credentialed Affiliate Delegates:	94
Credentialed Chapter Delegates:	<u>53</u>
Total Credentialed Delegates:	147

**Action:** Adopted with a majority of delegates voting in the affirmative.  
The Credentials Report established that a quorum was present.

### VI. Adoption of House of Delegates' Standing Rules

**Action:** Adopted with 99 percent of delegates voting in the affirmative.

### VII. Adoption of Agenda

**Action:** Adopted with 98 percent of delegates voting in the affirmative.

### VIII. Memorial Resolution

**Motion:** Be it resolved, that the American Society of Radiologic Technologists expresses its sorrow over the passing of these members since our 2012 House of Delegates meeting in Las Vegas, N.V., and affirms our sorrow by rising for a moment of silence in memory of our departed colleagues.

**Action:** Adopted by a rising vote without objection. (The [list](#) of deceased members can be found in the attached appendix.)

**IX. Courtesy Resolutions**

No courtesy resolutions were received.

**X. ASRT Annual Report**

President of the ASRT Donna Long presented the annual report. The 2013 election results were provided to the House of Delegates.

**XI. Most Active Chapter Award**

Most active chapter award was presented to the Radiologist Assistants chapter delegates.

**XII. Introduction of Late Main Motions Requiring a 2/3 Vote to Debate**

No late motions were received.

**XIII. Nominations for Speaker and Vice Speaker**

**Speaker**

Amanda Garlock-Corbin

**Vice Speaker**

Michael Odgren

Heather Moore

**XIV. Announcements**

**XV. Adjournment**

Speaker of the House Sandra Hayden adjourned the first business meeting of the 2013 House of Delegates at 3:44 p.m., Friday, June 14, 2013.

# Twenty-eighth Annual Meeting of the ASRT House of Delegates

Hyatt Regency  
Albuquerque, N.M  
June 14-16, 2013

## Second Business Meeting

### I. Call to Order

Speaker of the House Sandra Hayden called the second business meeting of the 28th Annual Meeting of the ASRT House of Delegates to order at 8:05 a.m., Sunday, June 16, 2013.

### II. Credentials Report

Vice Speaker Amanda Garlock-Corbin presented the Credentials Report. There was no change in the number of credentialed delegates (147).

### III. Committee on Bylaws Report

Chairman G. Tim Wescott presented the Committee on Bylaws report.

**Motion:** If adopted, the Bylaws revision become effective upon the adjournment of the 2013 House of Delegates meeting.

**Action:** Adopted with 95 percent (139/7) of the delegates voting in the affirmative.

**Motion:** Move the adoption of the proposed bylaws revision as amended for the current ASRT bylaws.

**Action:** Adopted with 91 percent (129/12) of the delegates voting in the affirmative

[Bylaws Revision Attached](#)

### IV. Commission Report and Consent Calendar

**Action:** Motions 01, 03, 10, 13, 17, 18, 18a, 19, 20, 22 and 23 were removed from the Consent Calendar. Motion 22 was ruled out of order by the Speaker. Following this action the remainder of the Consent Calendar, consisting of motions 2, 4, 5, 6, 7, 8, 9, 11, 12, 14, 15, 16, and 21 was adopted by 99 percent (142/2) of the delegates voting in the affirmative.

Chairman Travis Prowant presented the Commission report. The full content of each

motion can be found in the attached appendix. The results of each motion are as follows:

<b>Main Motion</b>	<b>Title</b>	<b>Action</b>
<a href="#">C-13.01</a>	Membership Dues for Active, Associate, Limited X-ray Machine Operator, International and Radiologist Assistant Membership Categories	Motion to substitute not adopted 27 – 119. Original motion Adopted 122 - 23.
<a href="#">C-13.02</a>	Membership Dues for Graduate Bridge Membership Category	Adopted on Consent Calendar.
<a href="#">C-13.03</a>	Membership Dues for Retired Membership Category	Adopted 135 - 11.
<a href="#">C-13.04</a>	Membership Dues for Student Membership Category	Adopted on Consent Calendar.
<a href="#">C-13.05</a>	Amend the Cardiovascular Interventional Practice Standards	Adopted on Consent Calendar.
<a href="#">C-13.06</a>	Amend the Computed Tomography Practice Standards	Adopted on Consent Calendar.
<a href="#">C-13.07</a>	Rescind the Position Statement “Computed Tomography Procedures on Pediatric Patients”	Adopted on Consent Calendar.
<a href="#">C-13.08</a>	Amend the Limited X-Ray Machine Operator Practice Standards	Adopted on Consent Calendar.
<a href="#">C-13.09</a>	Rescind the Position Statement “Definition of Limited X-ray Machine Operator”	Adopted on Consent Calendar.
<a href="#">C-13.10</a>	Rescind the Position Statement “Evaluating Medical Images for Technical Adequacy”	Adopted 103 - 42.
<a href="#">C-13.11</a>	Rescind the Position Statement “Limited X-Ray Machine Operator Education and Examination	Adopted on Consent Calendar.
<a href="#">C-13.12</a>	Rescind the Position Statement “Limited X-Ray Machine Operator Scope of Practice”	Adopted on Consent Calendar.
<a href="#">C-13.13</a>	Amend the Nuclear Medicine Practice Standards	Adopted 111 – 33.
<a href="#">C-13.14</a>	Amend the Radiography Practice Standards	Adopted on Consent Calendar.
<a href="#">C-13.15</a>	Rescind the Position Statement “Documentation of Patient Radiation Exposure and Shielding for Computed Tomography and Fluoroscopic Procedures”	Adopted on Consent Calendar.
<a href="#">C-13.16</a>	Rescind the Position Statement “Ensuring Radiation Exposures Are As Low As Reasonably Achievable”	Adopted on Consent Calendar.
<a href="#">C-13.17</a>	Rescind the Position Statement “Monitoring Patient Exposure During Utilization of Digital Radiography Systems”	Not Adopted 44 – 102.
<a href="#">C-13.18</a>	Rescind the Position Statement “Radiographic Technique Charts”	Not Adopted 24 - 120.
<a href="#">C.13.18a</a>	Amend the Position Statement “Radiographic Technique Charts”	Motion to amend adopted 144 – 1.  Adopted as amended 141 - 3.

<a href="#">C-13.19</a>	Amend the Practice Standards Glossary	Motion to refer amendment to Practice Standards Council adopted 142 – 2.  Adopted 128 - 14.
<a href="#">C-13.20</a>	Insert definition for practitioner in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements, Definitions Section	Not Adopted 18 – 126.
<a href="#">C-13.21</a>	Revise Common Language in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements, Determining Scope of Practice Section	Adopted on Consent Calendar.
<a href="#">C-13.22</a>	Nuclear Medicine Chapter Proposals to Proposed Practice Standards	Ruled out of order by Speaker.
<a href="#">C-13.23</a>	Replace all instances of the term “practitioner” in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements with the phrase “medical imaging and radiation therapy professional”	Adopted 140 – 5.

**V. New Business**

**A. Introduction of Late Main Motions Requiring a 3/4 Vote to Debate**

No late motions were received.

**B. Courtesy Resolutions**

Without objection, the House of Delegates agreed to suspend the rules to allow Student Leadership Development Participants to bring a motion of courtesy thanking the ASRT for opportunity to attend the ASRT Student Leadership Development



Program and the Annual Governance and House of Delegates meeting.

**Motion:** Moved by the Student Leadership Program participant and resolved the members of the student leadership development program would like to extend our gratitude to the ASRT for affording us this opportunity, The House of Delegates, the gracious sponsors of this year's event and most importantly our mentors for their support and guidance in this first step towards our future leadership goals.

**Action:** Adopted with delegates showing their appreciation through rising applause.

A courtesy motion was brought by Ginger Griffin and Carla Lafferty recognizing fathers on Father's Day.

**Motion:** Moved by Ginger Griffin and Carla Lafferty Today is a very special day to many individuals in this room. There are many individuals in this room who, through their dedication to our profession, have chosen to be with the ASRT family today instead at home celebrating all they do with their own families. May we mothers, sisters, daughters recognize all of ASRT Daddys, fathers, pops, grandfathers, granddaddys present here today. Thank you for all you do every day but especially today. Happy Father's Day! From your ASRT moms, daughters, sisters in this room.

**Action:** Adopted with delegates showing their appreciation through rising applause.

## **C. Report of Election of Chapter Steering Committee Chairmen**

### **Bone Densitometry**

Chairman Lisa King  
Vice Chairman Sharon Wartenbee

### **Cardiovascular Interventional Technology**

Chairman Steve Miles  
Vice Chairman Mitzi Drey

### **Computed Tomography**

Chairman Lori Suzanne Fisher  
Vice Chairman Jackie Turk

### **Education**

Chairman Melissa Jackowski  
Vice Chairman James Johnston

### **Magnetic Resonance**

Chairman Meredith Gammons  
Vice Chairman Michael Grey

### **Mammography**

Chairman Stephanie Johnston  
Vice Chairman Mary Carrillo

### **Management**

Chairman Michael DeVecchio  
Vice Chairman Gary Greathouse

### **Medical Dosimetry**

Chairman none elected  
Vice Chairman none elected

### **Military**

Chairman Shawn Stevenson  
Vice Chairman Geisha Patton

### **Nuclear Medicine**

Chairman Richard States  
Vice Chairman Ryan Smith

### **Quality Management**

Chairman Anne Brittain  
Vice Chairman Donita Shipman

### **Radiation Therapy**

Chairman Marissa Johnson  
Vice Chairman Michele Hutchins-Medina

### **Radiography**

Chairman Sharon Miller  
Vice Chairman Billy Mackey

### **Registered Radiologist Assistant**

Chairman Shellie Pike  
Vice Chairman Jonathan Mazal

### **Sonography**

Chairman Dale Collins  
Vice Chairman Amy Hofmann

**VI. Nominations for Speaker and Vice Speaker**

**Speaker**

Amanda Garlock-Corbin  
Bettye Wilson

**Vice Speaker**

Michael Odgren  
Heather Moore  
Shaun Caldwell  
Randall Harp

**VII. Election of Speaker and Vice Speaker**

**Action:** Amanda Garlock-Corbin - 92  
Bettye Wilson - 53

Amanda Garlock-Corbin was elected as speaker.

**Action:** Michael Odgren – 67  
Heather Moore - 31  
Shaun Caldwell - 46  
Randall Harp - 3

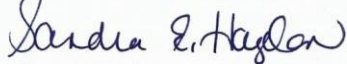
Runoff vote for top two candidates  
Michael Odgren - 84  
Shaun Caldwell - 62

Michael Odgren was elected as vice speaker.

**VIII. Adjournment**

Speaker of the House Sandra Hayden adjourned the second meeting of the 28th Annual Meeting of the House of Delegates at 11:47 a.m., Sunday, June 16, 2012.

**Approved:**



Speaker  
Chairman, Minutes Approval Committee  
Sandra Hayden



Vice Speaker  
Amanda Garlock-Corbin

**Twenty-eighth Annual Meeting of the ASRT**  
**House of Delegates**  
Motions Appendix

**Hyatt Regency**  
**Albuquerque, N.M. June 14-16, 2013**

***Motion***

Be it resolved, that the American Society of Radiologic Technologists expresses its sorrow over the passing of these members since our 2012 House of Delegates meeting in Las Vegas, N.V., and affirms our sorrow by rising for a moment of silence in memory of our departed colleagues.



**2013 Memorial Resolution**

The American Society of Radiologic Technologists House of Delegates moves the following:

Whereas, all members of the American Society of Radiologic Technologists are of immeasurable value within our organization and invaluable as members of the health team in the field of medicine, we present the names of members who have passed since our last House of Delegates Meeting:

Darren Akins - Keota, OK  
Margaret Babl - Plano, TX  
Chal Bauer - Freeland, MI  
Barbara Baye - Gretna, LA  
Rosallie Bender - Columbus, NJ  
Ann Bomberg - Kingman, AZ  
Crystal Boykin - Brandon, MS  
Neville Brissett - Yonkers, NY  
Daniel Brown - Patchogue, NY  
Thomas Burrin V - Indianapolis, IN  
Carolyn Cahn - Colonial Heights, VA  
Hollis Carle - Parlin, NJ  
Rita Carpenter - Dothan, AL  
Lisa Cella - Tampa, FL  
Joan Cory - Mason City, IA  
John Cullinan - Rochester, NY  
Ledru Dilse - Blue Springs, MO  
Pamela Dodson - Wilmington, NC  
Jo Erickson - Butte, MT  
Sheree Flynn - Washington, PA  
Shari Ford - Wichita, KS  
Catherine Ford - Scottsville, VA  
Gale Giovinazzi - Vineland, NJ  
Sharlene Gleason - Lansing, MI  
Elizabeth Gorman - East Aurora, NY  
Teresa Greene - Phenix City, AL  
William Griffith - Herrin, IL  
Karen Hamilton - Osage Beach, MO  
Sharon Hanley DeCoste - Plymouth, MA  
Rosemary Hasiuk - New Castle, DE  
John Heilig - Jasper, GA  
Billy Hennington - Union, MS  
James Hitchcock - Stamford, NY  
Ben Hubbard - South Williamson, KY  
Lynne Jeffers - Watertown, WI  
Lawrence Jennings - San Dimas, CA  
Kathy Kampa - Rosemount, MN  
Jerry Katz - Burien, WA  
Jullienne Keightley - Louisville, KY  
Ellen Kjos - San Marino, CA  
Theodore Kroger - Belmont, CA  
Dorothy La Prade - Knoxville, TN  
John Larsen - Byron Center, MI  
Andrew Loll - Briarcliff Manor, NY  
Linda Long - Newnan, GA  
Dewey Lytle - Galesburg, IL  
Susan Mandeville-Adams - Dublin, OH  
R.J. Martin - Lockport, LA  
Lori Mc Namara - Westfir, OR  
Eileen McGloine - Oceanside, NY  
Andrew McKeown - Albany, MN  
Debra Mingalone - Lodi, NJ

Martha Monroe - Middletown, VA  
Patricia Murphy - Cortez, CO  
Mabel Neal - Laguna Woods, CA  
Rebecca Neely - Amarillo, TX  
Katharyn O'Loughlin - Newport, NC  
Catherine Parsons - Rockwood, TN  
Lee Petty - Gadsden, AL  
Edward Raymond - Jamestown, NY  
Darryl Richardson - Bronx, NY  
Jo Robertson - San Anselmo, CA  
Sheila Roenfeldt - Phoenix, AZ  
Chris Rundles - Interlochen, MI  
Keith Russell - Rockport, ME  
Margaret Scott - Ukiah, CA  
Karen Seymour - Everett, WA  
Jack Smith - Evans, CO  
Dianne Steigerwaldt - Cranberry Twp, PA  
Lisa Stephens - Salisbury, NC  
Dale Stone - Shreveport, LA  
Annette Thill - Bluffton, IN  
Sharon Tribbett - Roanoke, VA  
Patricia Vitale - Guilford, CT  
Stephanie Walsh - Lehigh Acres, FL  
Jeroldine Walz - Lubbock, TX  
John Watt - Stilwell, KS  
Patricia West - South Williamsport, PA

Kathleen Westbrook - Moffit, ND  
David Wichy - Cornelius, NC  
Dolores Wilson - Scottsdale, AZ  
Karen Wyman - Rimerburg, PA  
Casey Yates - Lebanon, CT



# ASRT Articles of Incorporation, 2010

## ASRT Bylaws, 2013

Revised June 16, 2013

American Society of Radiologic Technologists, 15000 Central Ave. SE, Albuquerque, NM 87123-3909  
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## **The General Nature of the Bylaws**

Bylaws are rules adopted and maintained by an association or society that define and direct its internal structure and management. They are subordinate, and complementary, to an association's articles of incorporation.

Articles of incorporation are the primary law of an association used to establish the general organization and governing of the association to achieve corporate existence.

Bylaws are the secondary law of an association best used to detail how the society is formed and run.

In some states, bylaws are not specifically required for an incorporated or unincorporated association, or they are only mentioned in a cursory manner. ASRT's state of incorporation, Illinois, requires them. Even where legally optional, most associations elect to have a set of bylaws because of its usefulness in management operations.

If the articles constitute an agreement between the society and the state, the bylaws shall be viewed as constituting the terms of an agreement between an association and its members. The agreement ordinarily shall be honored and enforced in a court of law. Bylaws describe the relationships, rights and obligations for the members, directors, officers and staff of an association. They can be invaluable in avoiding or resolving differences among those who are part of the association or who deal with it.

Consequently, bylaws should be kept current, taking into account the changes of an association. Members and staff also should familiarize themselves with the document to better understand the organization they represent and that represents them.

*- Prepared September 2003 by ASRT's legal counsel,  
Webster, Chamberlain and Bean, Washington, D.C.*

# **Articles of Incorporation**

## **ARTICLE I**

The name of this organization shall be known as the American Society of Radiologic Technologists. The general nature of its business shall be educational, scientific and socioeconomic. The principal place of business of this corporation shall be located in the City of Chicago, County of Cook, State of Illinois, or at any other such place or places within the State of Illinois as the Board of Directors may from time to time determine by resolution thereof.

## **ARTICLE II**

The time of commencement of this corporation shall be Jan. 16, 1932, and the period of its duration shall be in perpetuity.

## **ARTICLE III**

The names and places of residence of the persons forming this corporation are:

Margaret Hoing, Chicago, Ill., president;  
Virginia Eller, Janesville, Wis., second vice president;  
Emma C. Grierson, St. Paul, Minn., secretary-treasurer.

## **ARTICLE IV**

The management of this corporation shall be vested in a Board of Directors chosen to serve in accordance with the provisions of the Bylaws of the corporation.

The officers of this corporation shall consist of a chairman, president, president-elect, vice president and a secretary-treasurer. They shall be selected annually by the membership in accordance with the provisions of the Bylaws and shall serve for a period of one year or until their successors have been selected and assumed office.

The Board of Directors shall meet at least once a year at the annual meeting of the corporation.

The election of officers shall be conducted as in the Bylaws provided.

## **ARTICLE V**

Individual members shall be admitted to this corporation in accordance with the qualifications and procedures established by the Bylaws. The candidate shall be notified of acceptance and shall be issued a certificate of membership. The membership may be renewed annually upon payment of such dues as shall be required. Rules of conduct for members, admission, expulsion of members and other related matters shall be governed by suitable Bylaws of this corporation.

Organizations engaged in and existing for purposes analogous to the nature of and business of this corporation may make application for and receive affiliate membership in this corporation upon such conditions and pursuant to such rules as shall be established by the Bylaws of this corporation.

#### **ARTICLE VI**

This corporation shall be nonprofit and nonsectarian. No part of any net earnings shall inure to the benefit of any individual, member or affiliate.

#### **ARTICLE VII**

Amendments to these Articles of Incorporation may be made by two-thirds of the members voting, following proper notification as established by the Bylaws of this corporation.

# **ASRT BYLAWS**

## **ARTICLE I**

### **Name**

The name of this organization shall be the American Society of Radiologic Technologists, hereinafter referred to as the ASRT.

## **ARTICLE II**

### **Definition and Purpose**

#### **Section 1. Definition**

Radiologic technologist shall be the term used to define radiographer, nuclear medicine technologist, radiation therapist, sonographer and magnetic resonance technologist and shall be used to describe the areas of certification or licensure. Additional terms of description may be adopted by the ASRT to define new areas of certification or licensure.

#### **Section 2. Purpose**

The purpose of ASRT shall be to advance the professions of radiation and imaging disciplines and specialties; to maintain high standards of education; to enhance the quality of patient care; and to further the welfare and socioeconomics of radiologic technologists.

## **ARTICLE III**

### **Membership**

#### **Section 1. Policy and Procedure**

- A. The ASRT is committed to equal opportunity and nondiscrimination in all programs and activities. No one shall be denied opportunities or benefits on the basis of age, sex, color, race, creed, national origin, religious persuasion, marital status, sexual orientation, gender identity, military status, political belief or disability.
- B. The name of the ASRT or any delegate in the House of Delegates, its Board of Directors or its staff, in their official capacities, shall not be used in connection with a corporate company for other than the regular functions of the ASRT.
- C. A candidate for membership shall submit an application for membership along with the required fee to the ASRT office.

#### **Section 2. Categories of Membership**

##### **Voting**

- A. Active members are those who are registered by the American Registry of Radiologic Technologists (ARRT) or equivalent or hold an unrestricted license in medical imaging

or radiation therapy under state statute. They shall have all rights, privileges and obligations of membership including the right to vote, hold office and serve as a delegate.

- B. Student members are those who are enrolled in primary medical imaging or radiation therapy programs. They shall have all rights, privileges and obligations of Active members. Eligibility for Student membership shall terminate upon initial certification.
- C. Graduate Bridge members are those who meet the following qualifications:
  - 1. have graduated from an accredited program in medical imaging or radiation therapy; or
  - 2. are registered by the American Registry of Radiologic Technologists (ARRT) or equivalent and are within 24 months of their initial certification.They shall have all rights, privileges and obligations of Active members.
- D. Emeritus members are those who have reached age 65, maintained membership in good standing in the ASRT for at least 30 years and applied for emeritus status. They shall have all rights, privileges and obligations of Active members except to hold office or serve as a delegate. They shall pay no membership dues. No new members shall be inducted into this category after January 1, 1990.
- E. Life members are those voting members who have maintained continuous membership for a minimum of 30 years and shall be limited to one for each 2,500 active members. Their participation as a member shall reflect exceptional service and dedication to the ASRT and the profession. They shall be selected by three-fourths vote of the entire membership of the Board of Directors. They shall have all rights, privileges and obligations of Active members. They shall pay no membership dues.
- F. Retired members are those who hold a certificate of recognition from the American Registry of Radiologic Technologists (ARRT) or equivalent or who meet Social Security Administration requirements for retirement. They shall have all rights, privileges and obligations of Active members except to hold office or serve as a delegate.
- G. Radiologist assistants are those registered radiologic technologists who hold the credential R.R.A. They shall have all rights, privileges and obligations of Active members.

### **Nonvoting**

- A. Associate members are those who are or have been employed in the technical, educational, managerial or corporate aspects of the medical imaging or radiation therapy professions and do not qualify for Active membership. They shall have all rights, privileges and obligations of Active members except to vote, hold office or serve as a delegate.
- B. Limited x-ray machine operators are those who perform diagnostic x-ray procedures on selected anatomical sites and are not registered radiologic technologists. They shall have

all rights, privileges and obligations of Active members except to vote, hold office or serve as a delegate.

- C. International members are those who reside outside the United States or any of its territories, are not registered by the American Registry of Radiologic Technologists (ARRT) or equivalent, and are employed in the technical, educational, managerial or corporate aspects of the medical imaging or radiation therapy professions. They shall have all rights, privileges and obligations of Active members except to vote, hold office or serve as a delegate.

### **Section 3. Dues and Fees**

- A. Dues for all members, proposed by the Board of Directors, require adoption by a two-thirds vote of the delegates voting at the annual meeting of the House of Delegates.
  - 1. Intent to change dues shall be communicated to all delegates a minimum of 45 days prior to the beginning of the annual meeting of the House of Delegates.
- B. One chapter membership shall be included as part of the annual ASRT dues. Each additional chapter membership shall require a fee as established by the ASRT Board of Directors.
- C. Dues shall be paid by the expiration date.

### **Section 4. Resignation**

Any member shall have the right to resign by written communication to the ASRT office.

### **Section 5. Reinstatement**

A member who has resigned or whose membership has been revoked by the ASRT for other reasons may be reinstated only after filing a new application, acceptance of the application by the Board of Directors, and paying the fees as a new member.

## **ARTICLE IV Officers**

### **Section 1. Positions**

The elected officers of the ASRT shall be chairman, president, vice president, president-elect and secretary-treasurer.

### **Section 2. Qualifications**

- A. General qualifications
  - 1. Shall practice in the medical imaging or radiation therapy professions or health care.
  - 2. Shall be a voting member of the ASRT and must have been a voting member for four years immediately preceding nomination.

3. Shall be a voting member of an ASRT affiliate or serve on active duty in the Army, Navy, Air Force or Coast Guard.
  4. Shall show proof of continuing education.
  5. Shall have served as a delegate for a minimum of two years.
  6. Shall not serve concurrently on the board of any national medical imaging or radiation therapy certification or national accreditation agency, or in the House of Delegates.
- B. President-elect
1. Shall have served on the ASRT Board of Directors.
- C. Vice president
1. Shall have served on the ASRT Board of Directors.
- D. Secretary-treasurer
1. Shall have fulfilled two years in any appointed or elected ASRT position, or as president of an affiliate society.
- E. An officer who met qualification requirements at the time of nomination shall be permitted to complete the term regardless of employment status changes.

### **Section 3. Terms of Office**

- A. The vice president and secretary-treasurer shall serve for a term of one year or until their successors have been elected.
- B. The president-elect shall serve for a term of one year as president-elect, one year as president and one year as chairman.
- C. Terms shall begin at the close of the annual meeting of the House of Delegates.

### **Section 4. Duties**

- A. Officers shall perform the duties prescribed by these bylaws.
- B. Chairman
1. Shall preside at meetings of the Board of Directors.
- C. President
1. In the absence or inability of the chairman to serve, the president shall preside at meetings of the Board of Directors.
  2. For additional duties related to committees see Article IX.
- D. Vice President



1. Shall assume the duties of the president when necessary.
- E. President-elect
1. Shall become familiar with all ASRT activities and be prepared to assume the office of president.
  2. For additional duties related to committees see Article IX.
- F. Secretary-treasurer
1. Shall perform duties assigned by the Board of Directors.

### **Section 5. Vacancies**

- A. A vacancy in the office of president shall be filled by the vice president.
- B. A vacancy in the office of president-elect shall be filled by a special election.
- C. A vacancy in the office of vice president or secretary-treasurer shall be filled by appointment by a majority vote of the entire remaining membership of the Board of Directors.

## **ARTICLE V**

### **House of Delegates**

### **Section 1. Purpose**

The House of Delegates shall be the legislative body of the ASRT. The House of Delegates establishes professional standards of practice.

### **Section 2. Composition**

- A. The House of Delegates shall be composed of the speaker and vice speaker, affiliate delegates and chapter delegates.
- B. Each affiliate shall be represented by two delegates.
- C. Each chapter, excluding the Military Chapter, shall be represented by four delegates.
- D. The Military Chapter shall be represented by a total of six delegates from any branch of the military.

### **Section 3. Delegate Requirements and Qualifications**

- A. Affiliate delegates
  1. Two delegates and two alternate delegates shall be elected or appointed by each ASRT affiliate in accordance with affiliate procedures.
  2. Affiliates shall submit completed affiliate delegate information forms to ASRT for the delegates and alternate delegates by the end of the last business day of

January. Delegate and alternate delegate positions not filled with qualified members by the last business day of January shall remain open until after the annual meeting of the House of Delegates.

3. A delegate shall show proof of continuing education.
4. A delegate shall be a voting member of the ASRT and the affiliate being represented for two years immediately preceding nomination.
5. A delegate shall have served as an officer, or on the Board of Directors or as a committee member in the affiliate being represented.
6. A delegate shall practice in the medical imaging or radiation therapy professions or health care.
7. A delegate may serve concurrently on the board of any national medical imaging or radiation therapy certification or national accreditation agency.
8. A delegate shall have the time and availability for necessary travel to represent the ASRT.
9. A delegate shall attend the annual meeting of the House of Delegates and all meetings required of delegates.

B. Chapter delegates excluding Military Chapter delegates

1. Two delegates and two alternate delegates shall be elected annually by a plurality vote of the voting members of the ASRT.
2. Delegates shall be elected for a term of two years. The term shall begin at the close of the annual meeting of the House of Delegates in the year the delegate is elected.
3. A delegate shall be limited to two, two-year consecutive terms unless there is not a full slate of qualified candidates nominated.
4. The delegate nominees receiving the third and fourth highest number of votes on the ballot are the elected alternate delegates.
5. An alternate delegate shall serve a one-year term. The term shall begin at the close of the annual meeting of the House of Delegates in the year the alternate delegate is elected.
6. If an alternate is not elected, this position remains open until the next regular election.
7. A delegate shall show proof of continuing education.

8. A delegate shall be a voting member of the ASRT and a member of an affiliate or have served as a Military Chapter delegate for two years immediately preceding nomination.
9. A delegate shall have served as an officer, delegate or a committee member in the ASRT, or as an officer, on the Board of Directors or as a committee member in an affiliate.
10. In clinical practice chapters where certification and/or post primary examination offered by an ASRT-recognized organization exists, the delegate shall show proof of current credential and documentation of current practice in the discipline or specialty being represented.
11. In management and education chapters, the delegate shall show proof of documentation of current practice in the discipline or specialty being represented.
12. A delegate shall only be elected to represent a chapter of which the delegate is a member for the two years immediately preceding nomination.
13. A delegate who met qualification requirements at the time of nomination shall be permitted to complete the term regardless of employment status changes.
14. A delegate may serve concurrently on the board of any national medical imaging or radiation therapy certification or national accreditation agency.
15. A delegate shall have the time and availability for necessary travel to represent the ASRT.
16. A delegate shall attend the annual meeting of the House of Delegates and all meetings required of delegates.

C. Military Chapter delegates

1. Three delegates and two alternate delegates shall be elected annually from any branch of the military by a plurality vote of the voting members of the ASRT.
2. Delegates shall be elected for a term of two years. The term shall begin at the close of the annual meeting of the House of Delegates in the year the delegate is elected.
3. A delegate shall be limited to two, two-year consecutive terms, unless there is not a full slate of qualified candidates nominated.
4. The delegate nominees receiving the fourth and fifth highest number of votes on the ballot are the elected alternate Military Chapter delegates.

5. An alternate delegate shall serve a one-year term. The term shall begin at the close of the annual meeting of the House of Delegates in the year the alternate delegate is elected.
6. If an alternate delegate is not elected, this position remains open until the next regular election.
7. A delegate shall show proof of continuing education.
8. A delegate shall be a voting member of the ASRT for two years immediately preceding nomination.
9. A delegate shall be on active duty in the Army, Navy, Air Force or Coast Guard.
10. A delegate shall practice in the medical imaging or radiation therapy professions or health care.
11. A delegate who met qualification requirements at the time of nomination shall be permitted to complete the term regardless of retirement or honorable discharge from active duty.
12. A delegate may serve concurrently on the board of any national medical imaging or radiation therapy certification or national accreditation agency.
13. A delegate shall have the time and availability for necessary travel to represent the ASRT.
14. A delegate shall attend the annual meeting of the House of Delegates and all meetings required of delegates.
15. A delegate shall be a member of the Military Chapter.

#### **Section 4. Meetings**

- A. The House of Delegates shall meet at least annually.
- B. The House of Delegates may permit any or all delegates to participate in a meeting by, or conduct the meeting through the use of, any means of communication by which all delegates participating may simultaneously hear each other during the meeting.
- C. Special meetings of the House of Delegates may be called at such time and place as designated by a majority vote of the Board of Directors, or by written request of 65 delegates. Members of the House of Delegates shall be notified 30 days in advance of such meetings, with a statement of the business to be transacted. No business other than that specified shall be transacted.

#### **Section 5. Quorum**

A quorum shall consist of at least 65 credentialed delegates.

### **Section 6. Voting**

- A. Members may attend the annual meeting of the House of Delegates, but only credentialed delegates shall vote. There shall be no proxy voting.
- B. Main motions adopted by the House of Delegates shall remain in force until rescinded or amended unless they are subject to Article VII, Section 2, paragraph D.
- C. The House of Delegates shall present recommendations to the Board of Directors. The Board of Directors shall report to the House regarding recommendations no later than the next annual meeting of the House of Delegates.

### **Section 7. Absences and Vacancies**

- A. Absence
  - 1. An absence exists when an elected/appointed delegate is unable to fulfill the duties of the position during the annual meeting of the House of Delegates. The delegate shall be considered absent for the purpose of that meeting only.
  - 2. It is the responsibility of the delegate to notify the ASRT, the speaker of the House, and the alternate delegate of the delegate's inability to attend the annual meeting of the House of Delegates as soon as possible. The alternate delegate shall be seated for that meeting only.
  - 3. If the alternate delegate is unable to serve because of extenuating circumstances, the speaker of the House may seat a qualified delegate for the annual meeting of the House of Delegates for that meeting only.
- B. Vacancies
  - 1. Delegate vacancies shall be filled by the elected/appointed alternate delegate.

### **Section 8. Probation**

- A. If an affiliate fails to seat all delegates, that affiliate enters into probationary status.
- B. If a chapter fails to elect and seat all delegates, that chapter enters into probationary status.

### **Section 9. Nominations and Elections of Speaker and Vice Speaker**

- A. At the annual meeting of the House of Delegates, prior to the close of the last business meeting of the House, a speaker of the House and a vice speaker of the House, who are members of the House, shall be elected by the credentialed delegates.
- B. Nominations for speaker and vice speaker of the House of Delegates shall be accepted at the first business meeting of the House of Delegates. Nominations shall only be accepted at the second business meeting of the House of Delegates if there are no qualified

candidates nominated at the first business meeting of the House of Delegates. An individual may not run for both speaker and vice speaker in the same year.

- C. The elections of speaker and vice speaker shall be by majority vote of the delegates voting. If the majority vote is not obtained on the first ballot, the top two vote candidates, or more in the case of a tie, shall have a runoff ballot.
- D. When there is only one candidate for speaker or vice speaker, the election may be by voice vote.
- E. The affiliate or chapter that the speaker or vice speaker represents shall be entitled to fill that delegate position.
  - 1. The elected/appointed alternate affiliate delegate shall fill the position. A new qualified alternate affiliate delegate may be elected/appointed by the affiliate.
  - 2. The elected alternate chapter delegate shall fill that position. A new qualified alternate delegate may be appointed by the chapter within 60 days following the close of the annual meeting of the House of Delegates.
  - 3. If an elected alternate chapter delegate does not exist for the vacated delegate seat, the delegate position remains vacant until the next regular election.

#### **Section 10. Qualifications for Speaker and Vice Speaker**

- A. General qualifications
  - 1. Shall practice in the medical imaging or radiation therapy professions or health care.
  - 2. Shall be a voting member of the ASRT and must have been a voting member for four years immediately preceding nomination.
  - 3. Shall be a voting member of an ASRT affiliate or serve on active duty in the Army, Navy, Air Force or Coast Guard.
  - 4. Shall show proof of continuing education.
  - 5. Shall have served as a delegate for a minimum of two years.
  - 6. Once elected, shall not serve concurrently on the board of any national medical imaging or radiation therapy certification or national accreditation agency, or as a delegate in the House of Delegates.
- B. A speaker or vice speaker who met qualification requirements at the time of nomination shall be permitted to complete the term regardless of employment status changes.

#### **Section 11. Terms of Speaker and Vice Speaker**

- A. The speaker and vice speaker shall be elected to serve for one year and may be re-elected for one additional, consecutive term.

- B. Terms that are not consecutive shall not be restricted.
- C. The term shall begin at the close of the annual meeting of the House of Delegates.

**Section 12. Duties of Speaker and Vice Speaker**

- A. Speaker
  - 1. Shall preside at all House meetings.
  - 2. May vote only if his or her vote will make a difference in the outcome of the question being considered.
  - 3. Shall be a member of the Board of Directors.
  - 4. For additional duties related to committees see Article IX.
- B. Vice Speaker
  - 1. Shall be a nonvoting member of the House.
  - 2. In the absence of the speaker, the vice speaker shall assume the duties of the speaker of the House, including the right to vote when the vote will make a difference.
  - 3. Shall be a member of the Board of Directors.

**Section 13. Vacancy of Speaker and Vice Speaker**

- A. A vacancy in the office of speaker of the House shall be filled by the vice speaker.
- B. A vacancy in the office of vice speaker of the House shall be filled by a special election of the House of Delegates.
- C. In the case of a concurrent vacancy in the office of speaker and vice speaker, the office of speaker shall be filled by appointment by a majority vote of the entire remaining membership of the Board of Directors.

**ARTICLE VI**  
**Nominations and Elections**

**Section 1. Composition and Responsibilities of the Committee on Nominations**

- A. The Board of Directors shall appoint a chairman and six members to the Committee on Nominations, none of whom may be members of the Board of Directors.
- B. It shall be the duty of the Committee on Nominations to review candidate information and present all qualified candidates for ASRT officer and chapter delegate positions.

**Section 2. Nominations**

- A. Nominations of officers and chapter delegates may be submitted by any ASRT voting member. Nominations shall be received in the ASRT office by the end of the first business day of October. Completed candidate information forms shall be received in the ASRT office by the end of the first business day of November.
- B. An individual may not run for a national office and chapter delegate position on the same ballot.
- C. An individual may not run for more than one chapter delegate position on the same ballot.
- D. An individual shall not hold a national office and chapter delegate position simultaneously.

**Section 3. Balloting**

- A. Ballots prepared by the ASRT office shall be made available to the voting members at least 120 days prior to the beginning of the annual meeting of the House of Delegates.
- B. Ballots shall be cast no later than 90 days prior to the beginning of the annual meeting of the House of Delegates. Ballots postmarked after this date shall not be counted.
- C. Write-in votes are prohibited for all officer and chapter delegate positions.

**Section 4. Election and Notification**

- A. The vice president, president-elect, secretary-treasurer and chapter delegates shall be elected by a plurality vote of the voting members of the ASRT.
- B. A tie vote shall be decided by lot at a regular business meeting of the House of Delegates.
- C. Newly elected officers and chapter delegates shall be notified of election results at least 60 days prior to the beginning of the annual meeting of the House of Delegates.
- D. Election results shall be announced at a regular business meeting of the House of Delegates.

**ARTICLE VII**  
**Board of Directors**

**Section 1. Composition**

The Board of Directors shall consist of the officers of the ASRT, and the speaker and vice speaker of the House of Delegates.

**Section 2. Duties**

The Board of Directors shall:



- A. Be vested with the responsibility of the management of the business of the corporation in concert with its strategic plan.
- B. Appoint external organization representatives.
- C. Act on main motions received from the Commission concerning matters of organizational operations and report the status to the House of Delegates.
- D. Temporarily suspend main motions adopted by the House of Delegates if found to be contrary to federal, state or local laws, ASRT Bylaws, or to be financially infeasible.
- E. Place affiliates and chapters on probationary or inactive status.
- F. Reinstate affiliates to active status when the requirements of these Bylaws, the ASRT Affiliate Charter Agreement and the House of Delegates Procedure Manual are met.
- G. Reinstate chapters to active status when the requirements of these Bylaws and the House of Delegates Procedure Manual are met.

**Section 3. Meetings**

- A. The Board of Directors shall meet at least annually at the annual meeting of the House of Delegates.
- B. The president or the chairman of the Board, or a majority of the members of the Board of Directors, upon written request to the chairman of the Board, may call a meeting, and the meeting shall occur, provided no less than a 15-day notice to all Board members is given.
- C. The Board of Directors may permit any or all members to participate in a meeting by, or conduct the meeting through the use of, any means of communication by which all members participating may simultaneously hear each other during the meeting.

**Section 4. Quorum**

A majority of the Board of Directors shall constitute a quorum for all meetings. Proxies are prohibited.

**ARTICLE VIII  
Censure, Reprimand and Removal**

An ASRT member, delegate or Board member may be censured, reprimanded or removed for cause. Sufficient cause includes a violation of the Bylaws or any lawful rule or practice duly adopted by the ASRT, dereliction of duty, other conduct prejudicial to the interests of the ASRT, or conduct detrimental to the ASRT. Such action may occur following completion of the due process procedure.

- A. The Board of Directors must receive formal and specific charges in writing against the individual.
- B. If the Board of Directors deems the charges to be sufficient, the person charged shall be advised, in writing, of the charges.
- C. A statement of the charges shall be sent by certified or registered mail to the last recorded address of the person charged at least 20 days before final action is taken.
- D. The statement shall be accompanied by a notice of the time and place of the meeting of the Board of Directors at which the charges shall be considered.
- E. The person charged shall have the opportunity to address the charges and be represented by counsel to present any defense to such charges before action is taken.
- F. Censure or reprimand of an ASRT member or delegate shall be by majority vote of the entire membership of the Board of Directors.
- G. Censure or reprimand of a Board member shall be by majority vote of the entire remaining membership of the Board of Directors.
- H. Removal of an ASRT member or delegate shall be by three-fourths vote of the entire membership of the Board of Directors.
- I. Removal of a Board member shall be by three-fourths vote of the entire remaining membership of the Board of Directors.
- J. Affiliates have the power to remove affiliate delegates.

## **ARTICLE IX**

### **Committees**

- A. There shall be committees as deemed necessary appointed by the Board of Directors, president, president-elect or speaker of the House of Delegates.
- B. The appointing authority may appoint Board members as ex-officio members of all committees, except the Committee on Nominations.
- C. The Board shall appoint and provide charges to committees appointed by the Board.
- D. The president-elect shall appoint and provide charges to presidential committees for his or her presidential year.
- E. The speaker shall appoint and provide charges to House committees.

- F. A vacancy in any committee shall be filled by the appointing power.

## **ARTICLE X**

### **Affiliate Organizations and Chapters**

#### **Section 1. Affiliate Organizations**

- A. The ASRT has granted one affiliate charter in each state, the District of Columbia, the city of Philadelphia, Guam and Puerto Rico.
- B. Each affiliate shall renew its charter annually, and within 60 days after the close of its fiscal year, submit the following to the ASRT:
1. Annual budget/financial statement.
  2. Affiliate bylaws in agreement with ASRT Bylaws.
  3. Articles of incorporation.
  4. Certificate of good standing or proof of active incorporation verifying corporate existence is valid dated no later than 90 days prior to application being submitted.
  5. Evidence of IRS recognition of tax-exempt status (e.g., determination letter issued to applicant or letter requesting ASRT include applicant in group exemption number).
  6. Verification that affiliate officers are ASRT members.
  7. Annual meeting information.
  8. Names and contact information for officers and board members.
  9. List of affiliate subordinates recognized by affiliate and attestation that these subordinates are in compliance with ASRT affiliate subordinate policies and procedures.
  10. Verification that the affiliate filed the appropriate tax returns with the IRS in the prior year.
- C. Any affiliate not in compliance with the ASRT Bylaws, the ASRT Affiliate Charter Agreement or the House of Delegates Procedure Manual shall be placed on probationary status.
- D. An affiliate on probationary status for more than two consecutive years shall be considered inactive.

- E. The ASRT Affiliate Charter Agreement may be terminated by the House of Delegates or by a vote of the members of the affiliate.
- F. The ASRT shall not be responsible for any debts, actions or statements made by, or on behalf of, any affiliate.

## **Section 2. Chapters**

- A. Recognized chapters are:
  - 1. Bone densitometry
  - 2. Cardiovascular interventional technology
  - 3. Computed tomography
  - 4. Education
  - 5. Magnetic resonance
  - 6. Mammography
  - 7. Management
  - 8. Medical dosimetry
  - 9. Military
  - 10. Nuclear medicine
  - 11. Quality management
  - 12. Radiation therapy
  - 13. Radiography
  - 14. Registered radiologist assistant
  - 15. Sonography
- B. Chapters shall be governed by the ASRT Bylaws.
- C. Any chapter not in compliance with the ASRT Bylaws or the House of Delegates Procedure Manual shall be placed on probationary status.
- D. A chapter on probationary status for more than two consecutive years shall be considered inactive.

## **ARTICLE XI Commission and Main Motions**

### **Section 1. Composition and Responsibilities of the Commission**

- A. The Commission shall consist of a chairman and members appointed by the speaker of the House.
- B. Main motions shall be submitted to the Commission via the vice speaker of the House.
  - 1. Main motions submitted by individual delegates must be seconded by another delegate.
  - 2. Main motions submitted on behalf of chapters must be adopted by a majority of the chapter steering committee.

3. Main motions submitted on behalf of affiliates must be adopted by the affiliate's board of directors.
  4. Main motions submitted on behalf of Board of Directors, Commission and committees must be adopted by a majority of the submitting group.
  5. Only motions submitted by individual delegates need to be seconded.
- C. The Commission shall distribute main motions as follows: Practice-related main motions shall be reported to the House of Delegates by the Commission; operational main motions shall be reported to the House of Delegates by the Board of Directors; and main motions containing Bylaw implications or Bylaw amendments shall be reported to the House of Delegates by the Committee on Bylaws.

### **Section 2. Deadline**

Proposed main motions from any approved source other than the Board of Directors and the Commission shall be received by the vice speaker of the House by the first business day of January.

### **Section 3. Notification**

Main motions received by the Commission and sent to the House of Delegates shall be sent to the delegates 45 days prior to the beginning of the annual meeting of the House of Delegates.

### **Section 4. Late Main Motions**

- A. Late main motions received by the speaker of the House prior to the beginning of the first business meeting of the House of Delegates shall be read and require a two-thirds vote of the delegates to be debated.
- B. Late main motions received by the speaker of the House after the beginning of the first business meeting of the House of Delegates shall be read and require a three-fourths vote of the delegates to be debated.

## **ARTICLE XII Parliamentary Authority**

The rules contained in the current edition of *Robert's Rules of Order Newly Revised*, shall govern the ASRT in all cases in which they are applicable unless they are inconsistent with these Bylaws, the Articles of Incorporation, or state or federal law.

## **ARTICLE XIII Amendments**

- A. Amendments to the Bylaws shall be received by the vice speaker by the first business day of January.
- B. Notice of Bylaw amendments shall be provided to the delegates at least 45 days prior to the beginning of the annual meeting of the House of Delegates.
- C. All main motions received by the first business day of January that require a Bylaw amendment shall be sent to the chairman of the Committee on Bylaws for proper structure to be included in the *Delegate Handbook* at the upcoming annual meeting of the House of Delegates.
- D. These Bylaws may be amended by two-thirds vote of the delegates voting at the annual meeting of the House of Delegates.

#### **ARTICLE XIV Indemnification**

Every officer, director, employee or delegate of the ASRT shall be indemnified by the ASRT against all expenses and liabilities, including attorney's fees, in connection with any threatened, pending or completed proceeding in which the above-named individual is involved by reason of being or having been an officer, director, employee or delegate of the ASRT if the above-named individual acted in good faith and within the scope of the above-named individual's authority and in a manner reasonably believed to be not opposed to the best interests of the ASRT. In no event shall indemnification be paid to or on behalf of any above-named individual going beyond or acting beyond the powers granted by authority of this organization or Bylaws. The foregoing right of indemnification shall be in addition to, and not exclusive of, all other rights to which such officer, director, employee or delegate may be entitled.

#### **ARTICLE XV Dissolution**

In the event of dissolution or final liquidation of the ASRT, all of its assets remaining after payment of its obligations shall have been made or provided for, shall be distributed to and among such corporations, foundations or other organizations organized and operated exclusively for scientific and educational purposes in radiologic technology, consistent with those of the ASRT, as designated by the Board of Directors.

***Main Motion C-13.01***

**Membership Dues for Active, Associate, Limited X-ray Machine Operator, International and Radiologist Assistant Membership Categories.**

The Board of Directors moves that ASRT membership dues for the Active, Associate, Limited X-ray Machine Operator, International and Radiologist Assistant categories be established at \$125 for a one-year term, \$235 for a two-year term, and \$335 for a three-year term, effective Oct. 1, 2013.

Motion to amend C13.01 by substitution to lower the rate of increase and request the ASRT to research potential savings and adjustments to the rate for digital membership option was considered but defeated.

***Main Motion C-13.02***

**Membership Dues for Graduate Bridge Membership Category**

The Board of Directors moves that ASRT membership dues for the Graduate Bridge category be established at \$85 for a one-year term and \$160 for a two-year term, effective Oct. 1, 2013.

***Main Motion C-13.03***

**Membership Dues for Retired Membership Category**

The Board of Directors moves that ASRT membership dues for the Retired category be established at \$62.50 for a one-year term, \$118 for a two-year term and \$168 for a three-year term, effective Oct. 1, 2013.

***Main Motion C-13.04***

**Membership Dues for Student Membership Category**

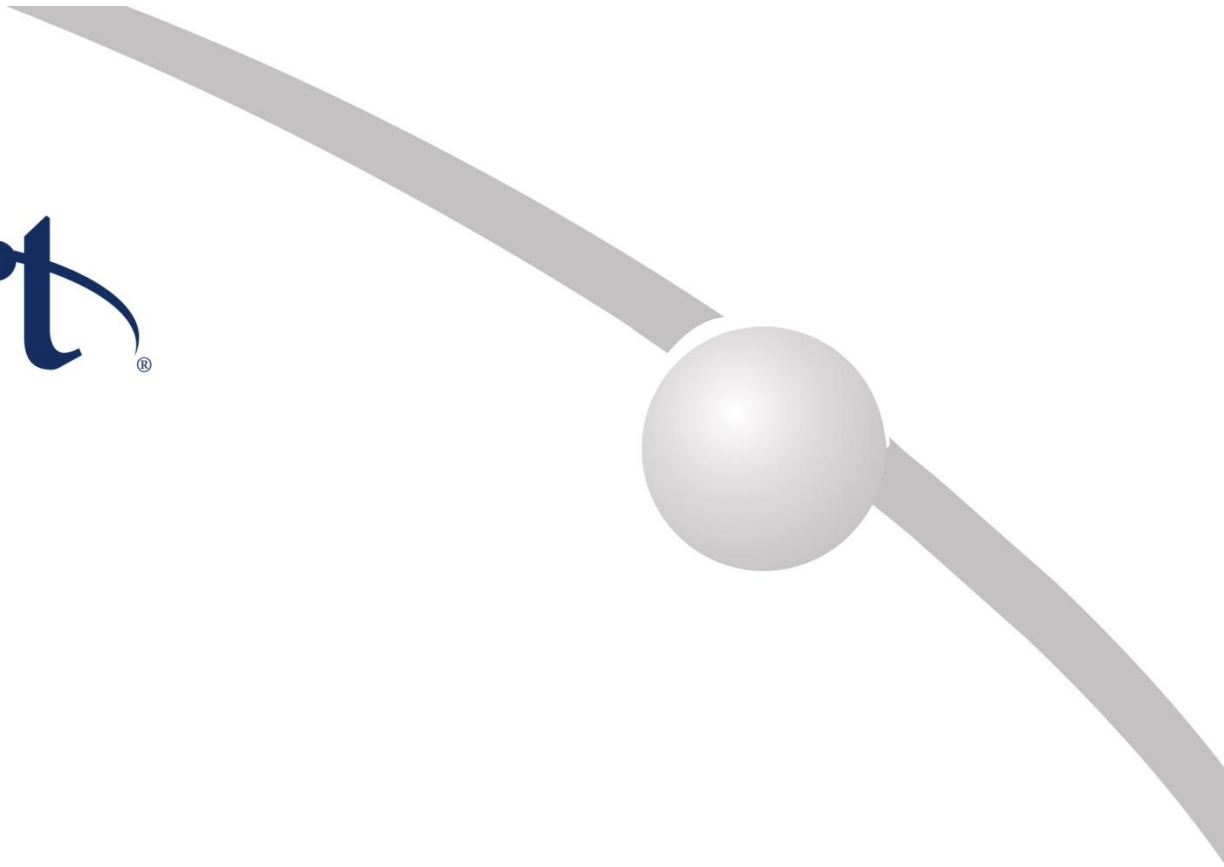
The Board of Directors moves that ASRT membership dues for the Student category be established at \$35 per year, effective Oct. 1, 2013.

***Main Motion C-13.05***

**Amend the Cardiovascular Interventional Practice Standards**

The Practice Standards Council moves to amend the Cardiovascular Interventional Practice Standards, page CV 7, Scope of Practice statement #5 by:

Striking the words “Starting and” before maintaining

A decorative graphic consisting of a thick, grey diagonal line that starts from the top left and extends towards the bottom right. A large, grey, three-dimensional sphere is positioned where the line changes direction, appearing to be attached to it.

# The Practice Standards for Medical Imaging and Radiation Therapy

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## Cardiovascular Interventional Technology Practice Standards

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## Preface to Practice Standards

A profession's practice standards serve as a guide for appropriate practice. The practice standards define the practice and establish general criteria to determine compliance. Practice standards are authoritative statements established by the profession for judging the quality of practice, service and education provided by individuals who practice in medical imaging and radiation therapy.

Practice standards can be used by individual facilities to develop job descriptions and practice parameters. Those outside the imaging, therapeutic and radiation science community can use the standards as an overview of the role and responsibilities of the individual as defined by the profession.

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### Format

The Practice Standards for Medical Imaging and Radiation Therapy are divided into six sections: introduction, scope of practice, clinical performance, quality performance, professional performance and advisory opinion statements.

*Introduction.* The introduction provides definitions for the practice and the education and certification for individuals in addition to an overview of the specific practice.

*Scope of Practice.* The scope of practice delineates the parameters of the specific practice.

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*Specific Criteria.* Specific criteria meet the needs of the individuals in the various areas of professional performance. While many areas of performance within imaging and radiation sciences are similar, others are not. The specific criteria are drafted with these differences in mind.

# Introduction to Cardiovascular Interventional Technology Practice Standards

## Definition

This practice standards document for cardiovascular interventional technology is inclusive of the practice areas of vascular interventional and cardiac interventional technology.

The practice of cardiovascular interventional technology is performed by health care professionals responsible for the administration of ionizing radiation to humans and animals for diagnostic, therapeutic or research purposes. A cardiovascular interventional technologist performs radiographic and other procedures at the request of and for interpretation by a licensed independent practitioner.

The complex nature of disease processes involves multiple imaging modalities. The cardiovascular-interventional technologist has evolved from a special procedures radiologic technologist who produced radiographic images to a vital member of a multidisciplinary team consisting of interventional radiologists, cardiovascular interventional technologists, nurses, cardiologists and registered cardiovascular invasive specialists. These team members form a core of highly trained health care professionals who each bring expertise to the area of patient care.

Cardiovascular interventional technology integrates scientific knowledge, technical skills, patient interaction and compassionate care resulting in diagnostic information. A cardiovascular interventional technologist recognizes patient conditions essential for successful completion of the procedure.

The cardiovascular interventional technologist must demonstrate an understanding of human anatomy, physiology, pathology and medical terminology.

Cardiovascular interventional technologists must maintain a high degree of accuracy in radiographic positioning and exposure technique. They must possess, utilize and maintain knowledge about radiation protection and safety. Cardiovascular interventional technologists independently perform or assist the licensed independent practitioner in the completion of cardiovascular interventional technology procedures. Cardiovascular interventional technologists prepare, administer and document activities related to medications in accordance with state and federal regulations or lawful institutional policy.

Cardiovascular interventional technologists are the primary liaison between patients, licensed independent practitioners and other members of the support team. Cardiovascular interventional technologists must remain sensitive to the physical and emotional needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. As members of the health care team, cardiovascular interventional technologists participate in quality improvement processes and continually assess their professional performance.

Cardiovascular interventional technologists think critically and use independent, professional and ethical judgment in all aspects of their work. They engage in continuing education, to include their area of practice, to enhance patient care, radiation safety, public education, knowledge and technical competence.

## **Education and Certification**

Cardiovascular interventional technologists prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiography and attaining appropriate primary certification by American Registry of Radiologic Technologists

Eligibility to take the ARRT postprimary examination in vascular interventional radiography or cardiac interventional radiography requires appropriate primary certification at the time of examination and documentation of clinical experience in specific procedures. Those passing the vascular interventional radiography examination use R.T.(R)(VI) and those passing the cardiac interventional radiography examination use R.T.(R)(CI).

Individuals with the appropriate primary certification who have passed the ARRT postprimary examination in cardiovascular interventional radiography use the credentials R.T.(R)(CV). The Cardiovascular Credentialing International is another certifying agency. Individuals with the appropriate primary certification who pass the cardiovascular invasive specialist examination use the credential RCIS.

To maintain ARRT postprimary certification and/or CCI certification, cardiovascular interventional technologists must complete appropriate continuing education requirements to sustain a level of expertise and awareness of changes and advances in practice.

## **Overview**

An interdisciplinary team of radiologists, cardiovascular interventional technologists, radiographers and other support staff plays a critical role in the delivery of health services as new modalities emerge and the need for imaging procedures increases. A comprehensive procedure list for the cardiovascular interventional technologist is impractical because clinical activities vary by practice needs and expertise of the cardiovascular interventional technologist. As cardiovascular interventional technologists gain more experience, knowledge and clinical competence, the clinical activities for the cardiovascular interventional technologist may evolve.

State statute, regulation or lawful community custom may dictate practice parameters. *Wherever there is a conflict between these standards and state or local statutes or regulations, the state or local statutes or regulations supersede these standards.* A cardiovascular interventional technologist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

## **Cardiovascular-Interventional Technologist Scope of Practice**

The scope of practice of the medical imaging and radiation therapy professional includes:

- Receiving, relaying and documenting verbal, written and electronic orders in the patient's medical record.
- Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed independent practitioner.
- Verifying informed consent.
- Assuming responsibility for patient needs during procedures.
- Preparing patients for procedures.
- Applying principles of ALARA to minimize exposure to patient, self and others.
- Performing venipuncture as prescribed by a licensed independent practitioner.
- Starting and maintaining intravenous access as prescribed by a licensed independent practitioner.
- Identifying, preparing and/or administering medications as prescribed by a licensed independent practitioner.
- Evaluating images for technical quality, ensuring proper identification is recorded.
- Identifying and managing emergency situations.
- Providing education.
- Educating and monitoring students and other health care providers.
- Performing ongoing quality assurance activities.

The scope of practice of the cardiovascular interventional technologist also includes:

1. Performing cardiovascular interventional procedures as prescribed by a licensed independent practitioner.
2. Determining radiographic technique exposure factors.

3. Assisting licensed independent practitioner with fluoroscopic and specialized interventional radiography procedures.
4. Performing noninterpretive fluoroscopic procedures as prescribed by a licensed independent practitioner.
5. Maintaining intra-arterial access as prescribed by a licensed independent practitioner.
6. Participating in physiologic monitoring of patients.
7. Performing manual and mechanical hemostasis, including the use of closure devices, as prescribed by a licensed independent practitioner.
8. Placing, maintaining and removing peripherally inserted central catheters as prescribed by a licensed independent practitioner.

# Cardiovascular Interventional Clinical Performance Standards

## Standard One – Assessment

The cardiovascular interventional technologist collects pertinent data about the patient and the procedure.

### *Rationale*

Information about the patient's health status is essential in providing appropriate imaging and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Gathers relevant information from the patient, medical record, significant others and health care providers.
2. Reconfirms patient identification and verifies the procedure requested or prescribed.
3. Reviews the patient's medical record to verify the appropriateness of a specific examination or procedure.
4. Verifies the patient's pregnancy status.
5. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation or artifacts.
6. Recognizes signs and symptoms of an emergency.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Obtains and assesses information in conjunction with the cardiovascular team.
2. Verifies that current patient history and physical examination are available, including documenting or assisting in documenting patient medical history related to the procedure.
3. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

# Cardiovascular Interventional Clinical Performance Standards

## Standard Two – Analysis/Determination

The cardiovascular interventional technologist analyzes the information obtained during the assessment phase and develops an action plan for completing the procedure.

### *Rationale*

Determining the most appropriate action plan enhances patient safety and comfort, optimizes diagnostic and therapeutic quality and improves efficiency.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.
2. Employs professional judgment to adapt imaging and therapeutic procedures to improve diagnostic quality and therapeutic outcome.
3. Consults appropriate medical personnel to determine a modified action plan.
4. Determines the need for and selects supplies, accessory equipment, shielding and immobilization devices.
5. Determines the course of action for an emergency or problem situation.
6. Determines that all procedural requirements are in place to achieve a quality diagnostic or therapeutic procedure.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Analyzes and determines action plan in conjunction with the cardiovascular team.
2. Verifies current patient history and physical examination are available.
3. Documents or assists in documenting patient medical history related to the procedure.



# Cardiovascular Interventional Clinical Performance Standards

## Standard Three – Patient Education

The cardiovascular interventional technologist provides information about the procedure and related health issues according to protocol.

### *Rationale*

Communication and education are necessary to establish a positive relationship.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The cardiovascular interventional technologist verifies that written or informed consent has been obtained.
2. Provides accurate explanations and instructions at an appropriate time and at a level the patients and their care providers can understand. Addresses patient questions and concerns regarding the procedure.
3. Refers questions about diagnosis, treatment or prognosis to a licensed independent practitioner.
4. Provides related patient education.
5. Explains precautions regarding administration of medications.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Provides pre, peri and post procedure education.

# Cardiovascular Interventional Clinical Performance Standards

## Standard Four – Performance

The cardiovascular interventional technologist performs the action plan.

### *Rationale*

Quality patient services are provided through the safe and accurate performance of a deliberate plan of action.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Performs procedural timeout.
2. Implements an action plan.
3. Explains each step of the action plan to the patient as it occurs and elicits the cooperation of the patient.
4. Uses an integrated team approach.
5. Modifies the action plan according to changes in the clinical situation.
6. Administers first aid or provides life support.
7. Utilizes accessory equipment.
8. Assesses and monitors the patient's physical, emotional and mental status.
9. Applies principles of sterile technique.
10. Positions patient for anatomic area of interest, respecting patient ability and comfort.
11. Immobilizes patient for procedure.
12. Monitors the patient for reactions to medications.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Monitors ECG, blood pressure, respiration, oxygen saturation, level of consciousness and pain, pre, peri and post procedure.

2. Prepares, sets and implements appropriate technical parameters such as generators, power injectors, etc.
3. Collects and documents blood and tissue samples.
4. Records procedural events.

# Cardiovascular Interventional Clinical Performance Standards

## Standard Five – Evaluation

The cardiovascular interventional technologist determines whether the goals of the action plan have been achieved.

### *Rationale*

Careful examination of the procedure is important to determine that expected outcomes have been met.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Evaluates the patient and the procedure to identify variances that may affect the expected outcome.
2. Completes the evaluation process in a timely, accurate and comprehensive manner.
3. Measures the procedure against established policies, protocols and benchmarks.
4. Identifies exceptions to the expected outcome.
5. Develops a revised action plan to achieve the intended outcome.
6. Communicates revised action plan to appropriate team members.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Clinical Performance Standards

## Standard Six – Implementation

The cardiovascular interventional technologist implements the revised action plan.

### *Rationale*

It may be necessary to make changes to the action plan to achieve the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Bases the revised plan on the patient's condition and the most appropriate means of achieving the expected outcome.
2. Takes action based on patient and procedural variances.
3. Measures and evaluates the results of the revised action plan.
4. Notifies appropriate health care provider when immediate clinical response is necessary based on procedural findings and patient condition.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.
2. Performs routine and specialized postprocessing.

# Cardiovascular Interventional Clinical Performance Standards

## Standard Seven – Outcomes Measurement

The cardiovascular interventional technologist reviews and evaluates the outcome of the procedure.

### *Rationale*

To evaluate the quality of care, the cardiovascular interventional technologist compares the actual outcome with the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Reviews all diagnostic or therapeutic data for completeness and accuracy.
2. Uses evidenced-based practice to determine whether the actual outcome is within established criteria.
3. Evaluates the process and recognizes opportunities for future changes.
4. Assesses the patient's physical, emotional and mental status prior to discharge.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Clinical Performance Standards

## Standard Eight – Documentation

The cardiovascular interventional technologist documents information about patient care, the procedure and the final outcome.

### *Rationale*

Clear and precise documentation is essential for continuity of care, accuracy of care and quality assurance.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Documents diagnostic, treatment and patient data in the medical record in a timely, accurate and comprehensive manner.
2. Documents exceptions from the established criteria or procedures.
3. Provides pertinent information to authorized individual(s) involved in the patient's care.
4. Records information used for billing and coding procedures.
5. Archives images or data.
6. Verifies patient consent is documented.
7. Documents procedural timeout.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Obtains and documents data in the medical record pre, peri and post procedure.
2. Documents use of conscious sedation.
3. Documents radiation exposure parameters.

# Cardiovascular Interventional Quality Performance Standards

## Standard One – Assessment

The cardiovascular interventional technologist collects pertinent information regarding equipment, procedures and the work environment.

### *Rationale*

The planning and provision of safe and effective medical services relies on the collection of pertinent information about equipment, procedures and the work environment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Determines that services are performed in a safe environment, minimizing potential hazards, in accordance with established guidelines.
2. Confirms that equipment performance, maintenance and operation comply with manufacturer's specifications.
3. Verifies that protocol and procedure manuals include recommended criteria and are reviewed and revised.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Maintains controlled access to restricted area during radiation exposure.
2. Maintains and performs quality control on radiation safety equipment such as aprons, thyroid shields, etc.
3. Participates in radiation protection, patient safety, risk management and quality management activities.



# Cardiovascular Interventional Quality Performance Standards

## Standard Two – Analysis/Determination

The cardiovascular interventional technologist analyzes information collected during the assessment phase to determine the need for changes to equipment, procedures or the work environment.

### *Rationale*

Determination of acceptable performance is necessary to provide safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Assesses services, procedures and environment to meet or exceed established guidelines and adjusts the action plan.
2. Monitors equipment to meet or exceed established standards and adjusts the action plan.
3. Assesses and maintains the integrity of medical supplies such as a lot/expiration, sterility, etc.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Maintains documentation for tracking implantable devices.

# Cardiovascular Interventional Quality Performance Standards

## Standard Three – Education

The cardiovascular interventional technologist informs the patient, public and other health care providers about procedures, equipment and facilities.

### *Rationale*

Open communication promotes safe practices.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Elicits confidence and cooperation from the patient, the public and other health care providers by providing timely communication and effective instruction.
2. Presents explanations and instructions at the learner's level of understanding.
3. Educates the patient, public and other health care providers about procedures along with the biological effects of radiation, sound wave or magnetic field and protection.
4. Provides information to patients, health care providers, students and the public concerning the role and responsibilities of individuals in the profession.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Quality Performance Standards

## Standard Four – Performance

The cardiovascular interventional technologist performs quality assurance activities.

### *Rationale*

Quality assurance activities provide valid and reliable information regarding the performance of equipment, materials and processes.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Maintains current information on equipment, materials and processes.
2. Performs ongoing quality assurance activities.
3. Performs quality control testing of equipment.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Provides a safe and sterile environment for patients and staff.
2. Monitors image production to determine technical acceptability.

# Cardiovascular Interventional Quality Performance Standards

## Standard Five – Evaluation

The cardiovascular interventional technologist evaluates quality assurance results and establishes an appropriate action plan.

### *Rationale*

Equipment, materials and processes depend on ongoing quality assurance activities that evaluate performance based on established guidelines.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Validates quality assurance testing conditions and results.
2. Evaluates quality assurance results.
3. Formulates an action plan.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Quality Performance Standards

## Standard Six – Implementation

The cardiovascular interventional technologist implements the quality assurance action plan for equipment, materials and processes.

### *Rationale*

Implementation of a quality assurance action plan promotes safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Obtains assistance to support the quality assurance action plan.
2. Implements the quality assurance action plan.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Quality Performance Standards

## Standard Seven – Outcomes Measurement

The cardiovascular interventional technologist assesses the outcome of the quality management action plan for equipment, materials and processes.

### *Rationale*

Outcomes assessment is an integral part of the ongoing quality management action plan to enhance diagnostic and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Reviews the implementation process for accuracy and validity.
2. Determines that actual outcomes are within established criteria.
3. Develops and implements a modified action plan.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Quality Performance Standards

## Standard Eight – Documentation

The cardiovascular interventional technologist documents quality assurance activities and results.

### *Rationale*

Documentation provides evidence of quality assurance activities designed to enhance safety.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Maintains documentation of quality assurance activities, procedures and results in accordance with established guidelines.
2. Documents in a timely, accurate and comprehensive manner.

### *Specific Criteria*

None added.

# Cardiovascular-Interventional Professional Performance Standards

## Standard One – Quality

The cardiovascular interventional technologist strives to provide optimal patient care.

### *Rationale*

Patients expect and deserve optimal care during diagnosis and treatment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Collaborates with others to elevate the quality of care.
2. Participates in ongoing quality assurance programs.
3. Adheres to standards, policies and established guidelines.
4. Applies professional judgment and discretion while performing diagnostic study or treatment.
5. Anticipates and responds to patient needs.
6. Respects cultural variations.

### *Specific Criteria*

None added.



# Cardiovascular Interventional Professional Performance Standards

## Standard Two – Self-Assessment

The cardiovascular interventional technologist evaluates personal performance.

### *Rationale*

Self-assessment is necessary for personal growth and professional development.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Assesses personal work ethics, behaviors and attitudes.
2. Evaluates performance and recognizes opportunities for educational growth and improvement.
3. Recognizes and applies personal and professional strengths.
4. Participates in professional societies and organizations.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Professional Performance Standards

## Standard Three – Education

The cardiovascular interventional technologist acquires and maintains current knowledge in practice.

### *Rationale*

Advancements in the profession require additional knowledge and skills through education.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Completes education related to practice.
2. Maintains credentials and certification related to practice.
3. Participates in continuing education to maintain and enhance competency and performance.
4. Shares knowledge and expertise with others.

### *Specific Criteria*

The cardiovascular interventional technologist:

1. Maintains competency in the use of physiologic monitoring equipment.
2. Maintains competency in the use of hemostatic methods and devices.

# Cardiovascular Interventional Professional Performance Standards

## Standard Four – Collaboration and Collegiality

The cardiovascular interventional technologist promotes a positive and collaborative practice atmosphere with other members of the health care team.

### *Rationale*

To provide quality patient care, all members of the health care team must communicate effectively and work together efficiently.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Shares knowledge and expertise with members of the health care team.
2. Develops collaborative partnerships to enhance quality and efficiency.
3. Promotes understanding of the profession.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Professional Performance Standards

## Standard Five – Ethics

The cardiovascular interventional technologist adheres to the profession's accepted ethical standards.

### *Rationale*

Decisions made and actions taken on behalf of the patient are based on a sound ethical foundation.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Provides health care services with respect for the patient's dignity, age-specific needs and culture.
2. Acts as a patient advocate.
3. Takes responsibility for decisions made and actions taken.
4. Delivers patient care and service free from bias or discrimination.
5. Respects the patient's right to privacy and confidentiality.
6. Adheres to the established practice standards of the profession.

### *Specific Criteria*

None added.

# Cardiovascular Interventional Professional Performance Standards

## Standard Six – Research and Innovation

The cardiovascular interventional technologist participates in the acquisition and dissemination of knowledge and the advancement of the profession.

### *Rationale*

Scholarly activities such as research, scientific investigation, presentation and publication advance the profession.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The cardiovascular interventional technologist:

1. Reads and evaluates research relevant to the profession.
2. Participates in data collection.
3. Investigates innovative methods for application in practice.
4. Shares information through publication, presentation and collaboration.
5. Adopts new best practices.
6. Pursues lifelong learning.

### *Specific Criteria*

None added.

## **Cardiovascular Interventional Advisory Opinion Statements**

Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector.

Medication Injection through Existing Vascular Access.

Medication Injections by Radiologic Technologists.

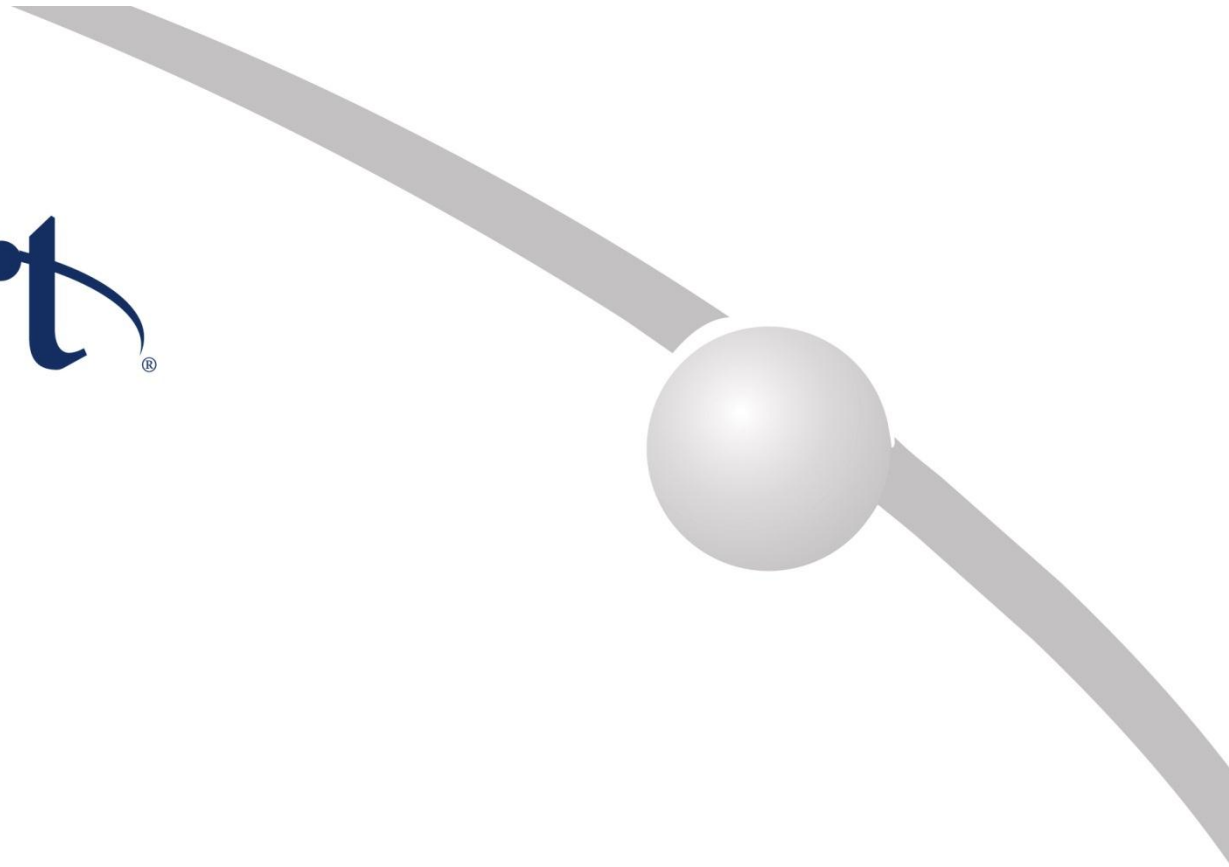
Placement of Personal Radiation Monitoring Devices.

***Main Motion C-13.06***

**Amend the Computed Tomography Practice Standards**

The Practice Standards Council moves to amend the Computed Tomography Practice Standards, pages CT 1-33, by:

- Substitution.



# The Practice Standards for Medical Imaging and Radiation Therapy

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## Computed Tomography Practice Standards

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## Preface to Practice Standards

A profession's practice standards serve as a guide for appropriate practice. The practice standards define the practice and establish general criteria to determine compliance. Practice standards are authoritative statements established by the profession for judging the quality of practice, service and education provided by individuals who practice in medical imaging and radiation therapy.

Practice standards can be used by individual facilities to develop job descriptions and practice parameters. Those outside the imaging, therapeutic and radiation science community can use the standards as an overview of the role and responsibilities of the individual as defined by the profession.

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### Format

The Practice Standards for Medical Imaging and Radiation Therapy are divided into six sections: introduction, scope of practice, clinical performance, quality performance, professional performance and advisory opinion statements.

*Introduction.* The introduction provides definitions for the practice and the education and certification for individuals in addition to an overview of the specific practice.

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*Specific Criteria.* Specific criteria meet the needs of the individuals in the various areas of professional performance. While many areas of performance within imaging and radiation sciences are similar, others are not. The specific criteria are drafted with these differences in mind.

# Introduction to Computed Tomography Practice Standards

## Definition

The practice of computed tomography is performed by a segment of health care professionals responsible for the administration of ionizing radiation to humans for diagnostic, therapeutic, or research purposes. A computed tomography technologist performs computed tomography procedures and related techniques, producing data at the request of and for interpretation by a licensed independent practitioner.

Although an interdisciplinary team of clinicians, computed tomography technologists and support staff plays a critical role in the delivery of health services, it is the computed tomography technologist who performs computed tomography procedures and reformats the computed tomography data that creates images needed for diagnosis and the performance of interventional and therapeutic procedures.

Computed tomography integrates scientific knowledge, technical skills, patient interaction and compassionate care resulting in diagnostic information. A computed tomography technologist recognizes patient conditions.-

Computed tomography technologists must demonstrate an understanding of human anatomy, human physiology, pathology and medical terminology. They must maintain a high degree of accuracy in positioning and exposure technique. Computed Tomography technologists must possess, utilize and maintain knowledge about radiation safety. Computed tomography technologists prepare, administer and document activities related to medications and radiation exposure in accordance with federal and state laws or lawful institutional policy.

Computed tomography technologists independently perform or assist the licensed independent practitioner in the completion of diagnostic, therapeutic, interventional, and fusion computed tomography procedures.

Computed tomography technologists are the primary liaison between patients, licensed independent practitioners,—and other members of the support team. Computed tomography technologists must remain sensitive to the needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. As members of the health care team, computed tomography technologists participate in quality improvement processes and continually assess their professional performance.

Computed tomography technologists think critically and use independent, professional and ethical judgment in all aspects of their work. They engage in continuing education to include their area of practice to enhance patient care, radiation safety, public education, knowledge and technical competence.

## **Education and Certification**

Computed tomography technologists prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiography, radiation therapy or nuclear medicine technology and attaining appropriate primary certification by the American Registry of Radiologic Technologists or Nuclear Medicine Technology Certification Board.

Eligibility to take the postprimary examination in computed tomography requires appropriate primary certification at the time of examination and documentation of clinical experience in specific procedures. Those passing the computed tomography examination use R.T.(CT).

To maintain ARRT postprimary certification, computed tomography technologists must complete appropriate continuing education requirements to sustain a level of expertise and awareness of changes and advances in practice.

## **Overview**

An interdisciplinary team of radiologists, computed tomography technologists, radiographers and other support staff plays a critical role in the delivery of health services as new modalities emerge and the need for imaging procedures increases. A comprehensive procedure list for the computed tomography technologist is impractical because clinical activities vary by practice needs and expertise of the computed tomography technologist. As computed tomography technologists gain more experience, knowledge and clinical competence, the clinical activities for the computed tomography technologist may evolve.

State statute, regulation or lawful community custom may dictate practice parameters. *Wherever there is a conflict between these standards and state or local statutes or regulations, the state or local statutes or regulations supersede these standards.* A computed tomography technologist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

## Computed Tomography Technologist Scope of Practice

The scope of practice of the medical imaging and radiation therapy professional includes:

- Receiving, relaying and documenting verbal, written and electronic orders in the patient's medical record.
- Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed independent practitioner.
- Verifying informed consent.
- Assuming responsibility for patient needs during procedures.
- Preparing patients for procedures.
- Applying principles of ALARA to minimize exposure to patient, self and others.
- Performing venipuncture as prescribed by a licensed independent practitioner.
- Starting and maintaining intravenous (IV) access as prescribed by a licensed independent practitioner.
- Identifying, preparing and/or administering medications as prescribed by a licensed independent practitioner.
- Evaluating images for technical quality, ensuring proper identification is recorded.
- Identifying and managing emergency situations.
- Providing education.
- Educating and monitoring students and other health care providers.
- Performing ongoing quality assurance activities.

The scope of practice of the computed tomography technologist also includes:

1. Performing computed tomography procedures as prescribed by a licensed independent practitioner.
2. Assisting a licensed independent practitioner with interventional computed tomography procedures.
3. Selecting appropriate technical factors with consideration given to established protocols and other factors influencing data acquisition.

4. Manipulating and reconstructing data for interpretation.
5. Archiving data as appropriate and documenting patient exposures.

# Computed Tomography Clinical Performance Standards

## Standard One – Assessment

The computed tomography technologist collects pertinent data about the patient and the procedure.

### *Rationale*

Information about the patient's health status is essential in providing appropriate imaging and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

5. Gathers relevant information from the patient, medical record, significant others and health care providers.
6. Reconfirms patient identification and verifies the procedure requested or prescribed.
7. Reviews the patient's medical record to verify the appropriateness of a specific examination or procedure.
8. Verifies the patient's pregnancy status.
5. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation or artifacts.
6. Recognizes signs and symptoms of an emergency.

### *Specific Criteria*

The computed tomography technologist:

1. Assesses patient for renal function prior to contrast media administration.
2. Assesses patient risk for allergic reaction to contrast media prior to administration.
3. Locates and reviews previous examinations for comparison.
4. Introduces oneself to the patient.
5. Identifies and removes artifact-producing objects.

# Computed Tomography Clinical Performance Standards

## Standard Two – Analysis/Determination

The computed tomography technologist analyzes the information obtained during the assessment phase and develops an action plan for completing the procedure.

### *Rationale*

Determining the most appropriate action plan enhances patient safety and comfort, optimizes diagnostic and therapeutic quality and improves efficiency.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.
2. Employs professional judgment to adapt imaging and therapeutic procedures to improve diagnostic quality and therapeutic outcome.
3. Consults appropriate medical personnel to determine a modified action plan.
4. Determines the need for and selects supplies, accessory equipment, shielding and immobilization devices.
5. Determines the course of action for an emergency or problem situation.
6. Determines that all procedural requirements are in place to achieve a quality diagnostic or therapeutic procedure.

### *Specific Criteria*

The computed tomography technologist:

1. Performs various power-up techniques per manufacturers specifications.
2. Evaluates lab values prior to administering contrast media, beginning interventional procedures or fusion imaging.
3. Determines patient compliance with pre-examination preparation instructions.
4. Reviews the patient's medical record and the licensed independent practitioner's request to determine optimal scanning parameters for clinical indication.



5. Determines the appropriate type and dose of contrast media to be administered, based on established protocols.

# Computed Tomography Clinical Performance Standards

## Standard Three – Patient Education

The computed tomography technologist provides information about the procedure and related health issues according to protocol.

### *Rationale*

Communication and education are necessary to establish a positive relationship.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The computed tomography technologist verifies that written or informed consent has been obtained.
2. Provides accurate explanations and instructions at an appropriate time and at a level the patients and their care providers can understand. Addresses patient questions and concerns regarding the procedure.
3. Refers questions about diagnosis, treatment or prognosis to a licensed independent practitioner.
4. Provides related patient education.
5. Explains precautions regarding administration of medications.

### *Specific Criteria*

The computed tomography technologist:

1. Provides pre, peri and post procedure education.
2. Instructs patients regarding contrast considerations.
3. Provides information about risks and benefits of radiation.
4. Consults with other departments-for patient services.

# Computed Tomography Clinical Performance Standards

## Standard Four – Performance

The computed tomography technologist performs the action plan.

### *Rationale*

Quality patient services are provided through the safe and accurate performance of a deliberate plan of action.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Performs procedural timeout.
2. Implements an action plan.
3. Explains each step of the action plan to the patient as it occurs and elicits the cooperation of the patient.
4. Uses an integrated team approach.
5. Modifies the action plan according to changes in the clinical situation.
6. Administers first aid or provides life support.
7. Utilizes accessory equipment.
8. Assesses and monitors the patient's physical, emotional and mental status.
9. Applies principles of sterile technique.
10. Positions patient for anatomic area of interest, respecting patient ability and comfort.
11. Immobilizes patient for procedure.
12. Monitors the patient for reactions to medications.

### *Specific Criteria*

The computed tomography technologist:

1. Utilizes a power injector for administration of medication when a Food and Drug Administration approved PICC line catheter or port specifically for power injectors is available, following manufacturer guidelines regarding infusion rate and pressure.
2. Utilizes radiation shielding devices.
3. Utilizes technical factors according to equipment specifications to minimize radiation exposure to the patient while maintaining image quality.
4. Confirms patient position matches the selected scanning orientation parameters.
5. Determines optimum placement of electrocardiogram (ECG) electrodes and correctly identifies ECG wave trigger.
6. Collects and documents tissue samples.

# Computed Tomography Clinical Performance Standards

## Standard Five – Evaluation

The computed tomography technologist determines whether the goals of the action plan have been achieved.

### *Rationale*

Careful examination of the procedure is important to determine that expected outcomes have been met.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Evaluates the patient and the procedure to identify variances that may affect the expected outcome.
2. Completes the evaluation process in a timely, accurate and comprehensive manner.
3. Measures the procedure against established policies, protocols and benchmarks.
4. Identifies exceptions to the expected outcome.
5. Develops a revised action plan to achieve the intended outcome.
6. Communicates revised action plan to appropriate team members.

### *Specific Criteria*

The computed tomography technologist:

1. Reviews images to determine if additional scans will enhance the diagnostic value of the procedure.

# Computed Tomography Clinical Performance Standards

## Standard Six – Implementation

The computed tomography technologist implements the revised action plan.

### *Rationale*

It may be necessary to make changes to the action plan to achieve the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Bases the revised plan on the patient's condition and the most appropriate means of achieving the expected outcome.
2. Takes action based on patient and procedural variances.
3. Measures and evaluates the results of the revised action plan.
4. Notifies appropriate health care provider when immediate clinical response is necessary based on procedural findings and patient condition.

### *Specific Criteria*

The computed tomography technologist:

1. Performs routine and specialized postprocessing.
2. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.

# Computed Tomography Clinical Performance Standards

## Standard Seven – Outcomes Measurement

The computed tomography technologist reviews and evaluates the outcome of the procedure.

### *Rationale*

To evaluate the quality of care, the computed tomography technologist compares the actual outcome with the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Reviews all diagnostic or therapeutic data for completeness and accuracy.
2. Uses evidenced based practice to determine whether the actual outcome is within established criteria.
3. Evaluates the process and recognizes opportunities for future changes.
4. Assesses the patient's physical, emotional and mental status prior to discharge.

### *Specific Criteria*

None added.

# Computed Tomography Clinical Performance Standards

## Standard Eight – Documentation

The computed tomography technologist documents information about patient care, the procedure and the final outcome.

### *Rationale*

Clear and precise documentation is essential for continuity of care, accuracy of care and quality assurance.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

8. Documents diagnostic, treatment and patient data in the medical record in a timely, accurate and comprehensive manner.
9. Documents exceptions from the established criteria or procedures.
10. Provides pertinent information to authorized individual(s) involved in the patient's care.
11. Records information used for billing and coding procedures.
12. Archives images or data.
13. Verifies patient consent is documented.
14. Documents procedural timeout.

### *Specific Criteria*

The computed tomography technologist:

1. Documents radiation exposure parameters.
2. Documents administered medications.
3. Documents the use of shielding devices and proper radiation safety practices per institutional policy.



# Computed Tomography Quality Performance Standards

## Standard One – Assessment

The computed tomography technologist collects pertinent information regarding equipment, procedures and the work environment.

### *Rationale*

The planning and provision of safe and effective medical services relies on the collection of pertinent information about equipment, procedures and the work environment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

4. Determines that services are performed in a safe environment, minimizing potential hazards, in accordance with established guidelines.
5. Confirms that equipment performance, maintenance and operation comply with manufacturer's specifications.
6. Verifies that protocol and procedure manuals include recommended criteria and are reviewed and revised.

### *Specific Criteria*

The computed tomography technologist:

1. Participates in radiation protection, patient safety, risk management and quality management activities.
2. Maintains controlled access to restricted area during radiation exposure.
3. Wears one or more personal radiation monitoring devices at the level indicated on the personal radiation monitoring device or as indicated by the radiation safety officer or designee.

# Computed Tomography Quality Performance Standards

## Standard Two – Analysis/Determination

The computed tomography technologist analyzes information collected during the assessment phase to determine the need for changes to equipment, procedures or the work environment.

### *Rationale*

Determination of acceptable performance is necessary to provide safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Assesses services, procedures and environment to meet or exceed established guidelines and adjusts the action plan.
2. Monitors equipment to meet or exceed established standards and adjusts the action plan.
3. Assesses and maintains the integrity of medical supplies such as a lot/expiration, sterility, etc.

### *Specific Criteria*

None added.

# Computed Tomography Quality Performance Standards

## Standard Three – Education

The computed tomography technologist informs the patient, public and other health care providers about procedures, equipment and facilities.

### *Rationale*

Open communication promotes safe practices.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Elicits confidence and cooperation from the patient, the public and other health care providers by providing timely communication and effective instruction.
2. Presents explanations and instructions at the learner's level of understanding.
3. Educates the patient, public and other health care providers about procedures along with the biological effects of radiation, sound wave, or magnetic field and protection.
4. Provides information to patients, health care providers, students and the public concerning the role and responsibilities of individuals in the profession.

### *Specific Criteria*

The computed tomography technologist:

1. Provides information on certification or accreditation to the patient, other health care providers and the general public.
2. Displays certificate(s) of compliance.

# Computed Tomography Quality Performance Standards

## Standard Four – Performance

The computed tomography technologist performs quality assurance activities.

### *Rationale*

Quality assurance activities provide valid and reliable information regarding the performance of equipment, materials and processes.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Maintains current information on equipment, materials and processes.
2. Performs ongoing quality assurance activities.
3. Performs quality control testing of equipment.

### *Specific Criteria*

The computed tomography technologist:

1. Monitors image production to determine technical acceptability.
2. Performs routine archiving status checks.
3. Consults with medical physicist in performing and documenting the quality assurance tests.

# Computed Tomography Quality Performance Standards

## Standard Five – Evaluation

The computed tomography technologist evaluates quality assurance results and establishes an appropriate action plan.

### *Rationale*

Equipment, materials and processes depend on ongoing quality assurance activities that evaluate performance based on established guidelines.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

4. Validates quality assurance testing conditions and results.
5. Evaluates quality assurance results.
6. Formulates an action plan.

### *Specific Criteria*

None added.

# Computed Tomography Quality Performance Standards

## Standard Six – Implementation

The computed tomography technologist implements the quality assurance action plan for equipment, materials and processes.

### *Rationale*

Implementation of a quality assurance action plan promotes safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Obtains assistance to support the quality assurance action plan.
2. Implements the quality assurance action plan.

### *Specific Criteria*

None added.

# Computed Tomography Quality Performance Standards

## Standard Seven – Outcomes Measurement

The computed tomography technologist assesses the outcome of the quality management action plan for equipment, materials and processes.

### *Rationale*

Outcomes assessment is an integral part of the ongoing quality management action plan to enhance diagnostic and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Reviews the implementation process for accuracy and validity.
2. Determines that actual outcomes are within established criteria.
3. Develops and implements a modified action plan.

### *Specific Criteria*

None added.

# Computed Tomography Quality Performance Standards

## Standard Eight – Documentation

The computed tomography technologist documents quality assurance activities and results.

### *Rationale*

Documentation provides evidence of quality assurance activities designed to enhance safety.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Maintains documentation of quality assurance activities, procedures and results in accordance with established guidelines.
2. Documents in a timely, accurate and comprehensive manner.

### *Specific Criteria*

None added.



# Computed Tomography Professional Performance Standards

## Standard One – Quality

The computed tomography technologist strives to provide optimal patient care.

### *Rationale*

Patients expect and deserve optimal care during diagnosis and treatment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Collaborates with others to elevate the quality of care.
2. Participates in ongoing quality assurance programs.
3. Adheres to standards, policies and established guidelines.
4. Applies professional judgment and discretion while performing diagnostic study or treatment.
5. Anticipates and responds to patient needs.
6. Respects cultural variations.

### *Specific Criteria*

None added.

# Computed Tomography Professional Performance Standards

## Standard Two – Self-Assessment

The computed tomography technologist evaluates personal performance.

### *Rationale*

Self-assessment is necessary for personal growth and professional development.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Assesses personal work ethics, behaviors and attitudes.
2. Evaluates performance and recognizes opportunities for educational growth and improvement.
3. Recognizes and applies personal and professional strengths.
4. Participates in professional societies and organizations.

### *Specific Criteria*

None added.

# Computed Tomography Professional Performance Standards

## Standard Three – Education

The computed tomography technologist acquires and maintains current knowledge in practice.

### *Rationale*

Advancements in the profession require additional knowledge and skills through education.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

5. Completes education related to practice.
6. Maintains credentials and certification related to practice.
7. Participates in continuing education to maintain and enhance competency and performance.
8. Shares knowledge and expertise with others.

### *Specific Criteria*

None added.

# Computed Tomography Professional Performance Standards

## Standard Four – Collaboration and Collegiality

The computed tomography technologist promotes a positive and collaborative practice atmosphere with other members of the health care team.

### *Rationale*

To provide quality patient care, all members of the health care team must communicate effectively and work together efficiently.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Shares knowledge and expertise with members of the health care team.
2. Develops collaborative partnerships to enhance quality and efficiency.
3. Promotes understanding of the profession.

### *Specific Criteria*

None added.

# Computed Tomography Professional Performance Standards

## Standard Five – Ethics

The computed tomography technologist adheres to the profession's accepted ethical standards.

### *Rationale*

Decisions made and actions taken on behalf of the patient are based on a sound ethical foundation.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

1. Provides health care services with respect for the patient's dignity, age-specific needs and culture.
2. Acts as a patient advocate.
3. Takes responsibility for decisions made and actions taken.
4. Delivers patient care and service free from bias or discrimination.
5. Respects the patient's right to privacy and confidentiality.
6. Adheres to the established practice standards of the profession.

### *Specific Criteria*

None added.

# Computed Tomography Professional Performance Standards

## Standard Six – Research and Innovation

The computed tomography technologist participates in the acquisition and dissemination of knowledge and the advancement of the profession.

### *Rationale*

Scholarly activities such as research, scientific investigation, presentation and publication advance the profession.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The computed tomography technologist:

7. Reads and evaluates research relevant to the profession.
8. Participates in data collection.
9. Investigates innovative methods for application in practice.
10. Shares information through publication, presentation and collaboration.
11. Adopts new best practices.
12. Pursues lifelong learning.

### *Specific Criteria*

None added.

## **Computed Tomography Advisory Opinion Statements**

Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector.

Medication Injection through Existing Vascular Access.

Medication Injections by Radiologic Technologists.

Placement of Personal Radiation Monitoring Devices.

***Main Motion C-13.07***

**Rescind the Position Statement “Computed Tomography Procedures on Pediatric Patients”**

The Practice Standards Council moves to rescind the position statement titled “Computed Tomography Procedures on Pediatric Patients”

**Computed Tomography Procedures on Pediatric Patients**

It is the position of the American Society of Radiologic Technologists that computed tomography procedures performed on children employ the “as low as reasonably achievable” (ALARA) principle.

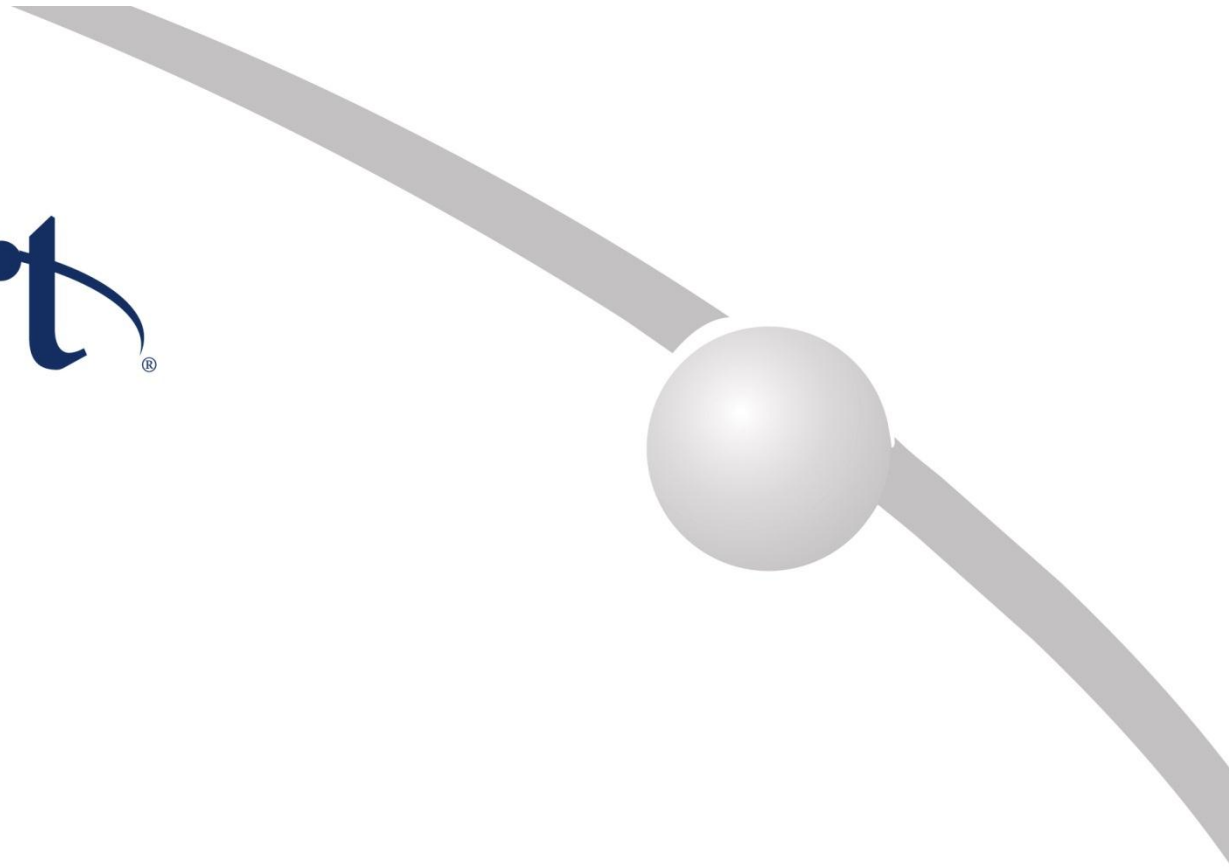
***Main Motion C-13.08***

**Amend the Limited X-Ray Machine Operator Practice Standards**

The Practice Standards Council moves to amend the Limited X-ray Machine Operator Practice Standards, pages LXMO 1-30, by:

- Substitution.





# The Practice Standards for Medical Imaging and Radiation Therapy

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## Limited X-Ray Machine Operator Practice Standards

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## Preface to Practice Standards

A profession's practice standards serve as a guide for appropriate practice. The practice standards define the practice and establish general criteria to determine compliance. Practice standards are authoritative statements established by the profession for judging the quality of practice, service and education provided by individuals who practice in medical imaging and radiation therapy.

Practice standards can be used by individual facilities to develop job descriptions and practice parameters. Those outside the imaging, therapeutic and radiation science community can use the standards as an overview of the role and responsibilities of the individual as defined by the profession.

The individual must be educationally prepared and clinically competent as a prerequisite to practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### Format

The Practice Standards for Medical Imaging and Radiation Therapy are divided into six sections: introduction, scope of practice, clinical performance, quality performance, professional performance and advisory opinion statements.

*Introduction.* The introduction provides definitions for the practice and the education and certification for individuals in addition to an overview of the specific practice.

*Scope of Practice.* The scope of practice delineates the parameters of the specific practice.

*Clinical Performance Standards.* The clinical performance standards define the activities of the individual in the care of patients and delivery of diagnostic or therapeutic procedures. The section incorporates patient assessment and management with procedural analysis, performance and evaluation.

*Quality Performance Standards.* The quality performance standards define the activities of the individual in the technical areas of performance including equipment and material assessment, safety standards and total quality management.

*Professional Performance Standards.* The professional performance standards define the activities of the individual in the areas of education, interpersonal relationships, self-assessment and ethical behavior.

*Advisory Opinion Statements.* The advisory opinions are interpretations of the standards intended for clarification and guidance for specific practice issues.

Each performance standards section is subdivided into individual standards. The standards are numbered and followed by a term or set of terms that identify the standards, such as “assessment” or “analysis/determination.” The next statement is the expected performance of the individual when performing the procedure or treatment. A rationale statement follows and explains why an individual should adhere to the particular standard of performance.

*Criteria.* Criteria are used in evaluating an individual’s performance. Each set is divided into two parts: the general criteria and the specific criteria. Both criteria should be used when evaluating performance.

*General Criteria.* General criteria are written in a style that applies to imaging and radiation science individuals. These criteria are the same in all of the practice standards, with the exception of limited x-ray machine operators, and should be used for the appropriate area of practice.

*Specific Criteria.* Specific criteria meet the needs of the individuals in the various areas of professional performance. While many areas of performance within imaging and radiation sciences are similar, others are not. The specific criteria are drafted with these differences in mind.

# Introduction to Limited X-Ray Machine Operator Practice Standards

## Definition

The operation of x-ray equipment in a limited scope is performed by a segment of health care employees responsible for the administration of ionizing radiation for diagnostic, therapeutic or research purposes. A limited x-ray machine operator performs radiographic procedures within the scope of practice, producing images at the request of and for the interpretation by a licensed independent practitioner. A limited x-ray machine operator acquires additional images at the request of a licensed independent practitioner or radiographer.

An interdisciplinary team of clinicians, radiologic technologists and support staff plays a critical role in the delivery of health services; the limited x-ray machine operator plays a supporting role through the performance of radiographic examinations within the scope of practice.

Limited x-ray machine operators are individuals other than a radiographer who performs static diagnostic radiologic images on selected anatomical sites. They must demonstrate an understanding of human anatomy, physiology, pathology and medical terminology. Limited x-ray machine operators must possess, utilize and maintain a high degree of accuracy in radiographic positioning and exposure technique. They must maintain knowledge of radiation protection and safety.

Limited x-ray machine operators perform radiographic procedures within their scope or assist the licensed independent practitioner or radiographer in the completion of radiographic procedures.

Limited x-ray machine operators must remain sensitive to the needs of the patient through good communication, patient monitoring and patient care skills. As members of the health care team, limited x-ray machine operators participate in quality improvement processes and continually assess their performance.

Limited x-ray machine operators think critically and use independent and ethical judgment in all aspects of their work. They engage in ongoing education to include their area of practice to enhance patient care, public education, knowledge and technical competence.

## Education and Certification

Limited x-ray machine operators prepare for their role on the interdisciplinary team in a number of ways. Various educational and training programs for limited x-ray machine operation exist throughout the United States.

Many states may require completion of a course of study prior to administering a state licensure exam for limited x-ray machine operators. Several states use some or all of the Limited Scope of Practice in Radiography state licensing exams developed by the American Registry of Radiologic Technologists. States that administer an exam and issue a license or certification may use various terminologies to designate a limited x-ray machine operator. The limited x-ray

machine operator may have limitations in performing ionizing radiation procedures specific to their scope of practice, and may be prohibited from performing other tasks.

## **Overview**

An interdisciplinary team of radiologists, limited x-ray machine operators, radiographers and other support staff plays a critical role in the delivery of health services as new modalities emerge and the need for imaging procedures increases. A comprehensive procedure list for the limited x-ray machine operator is impractical because clinical activities vary by practice needs and expertise of the limited x-ray machine operators. As limited x-ray machine operators gain more experience, knowledge and clinical competence, the clinical activities for the limited x-ray machine operators may evolve.

State statute, regulation or lawful community custom may dictate practice parameters. *Wherever there is a conflict between these standards and state or local statutes or regulations, the state or local statutes or regulations supersede these standards.* A limited x-ray machine operator should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

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## Limited X-ray Machine Operator Scope of Practice

The scope of practice of the medical imaging and radiation therapy professional includes:

- Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed independent practitioner.
- Preparing patients for procedures.
- Assuming responsibility for patient needs during procedures.
- Applying principles of ALARA to minimize exposure to patient, self and others.
- Evaluating images for technical quality, ensuring proper identification is recorded.
- Identifying and managing emergency situations.
- Providing education.
- Performing ongoing quality assurance activities.

The scope of practice of the limited x-ray machine operator also includes:

1. Performing radiographic procedures limited to education or the specific area of anatomical interest based on training and licensure/certification as prescribed by a licensed independent practitioner.
2. Assisting a licensed independent practitioner or radiographer during static radiographic procedures.
3. Determining technical exposure factors in accordance with the principles of ALARA.
4. Evaluating images for overall diagnostic quality.
5. Assisting the licensed independent practitioner or radiographer in providing patient education.
6. Applying the principles of patient safety during all aspects of radiographic procedures including assisting and transporting patients.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard One – Assessment

The limited x-ray machine operator collects pertinent data about the patient and the procedure.

### *Rationale*

Information about the patient's health status is essential in providing appropriate imaging and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

9. Gathers relevant information from the patient, medical record, significant others and health care providers.
10. Reconfirms patient identification and verifies the procedure requested or prescribed.
11. Reviews the patient's medical record to verify the appropriateness of a specific examination or procedure.
12. Verifies the patient's pregnancy status.
5. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation or artifacts.
6. Recognizes signs and symptoms of an emergency.

### *Specific Criteria*

The limited x-ray machine operator:

1. Identifies and removes artifact-producing objects.
2. Locates and reviews previous examinations for comparison.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Two – Analysis/Determination

The limited x-ray machine operator analyzes the information obtained during the assessment phase and develops an action plan for completing the procedure.

### *Rationale*

Determining the most appropriate action plan enhances patient safety and comfort, optimizes diagnostic quality and improves efficiency.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

7. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.
8. Employs judgment to adapt imaging procedures to improve diagnostic quality.
9. Consults appropriate medical personnel to determine a modified action plan.
10. Determines the need for and selects supplies, accessory equipment, shielding and immobilization devices.
11. Determines the course of action for an emergency or problem situation.
12. Determines that all procedural requirements are in place to achieve a quality diagnostic procedure.

### *Specific Criteria*

The limited x-ray machine operator:

1. Verifies that exposure indicator data for digital radiographic systems has not been altered or modified and is included in the Digital Imaging Communications in Medicine (DICOM) header and on images printed to media.
2. Analyzes digital images to determine utilization of appropriate imaging parameters.



# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Three – Patient Education

The limited x-ray machine operator provides information about the procedure and related health issues according to protocol.

### *Rationale*

Communication and education are necessary to establish a positive relationship.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The limited x-ray machine operator verifies that written or informed consent has been obtained.
2. Provides accurate explanations and instructions at an appropriate time and at a level the patients and their care providers can understand. Addresses patient questions and concerns regarding the procedure.
3. Refers questions about diagnosis, treatment or prognosis to a licensed independent practitioner.
4. Provides related patient education.

### *Specific Criteria*

The limited x-ray machine operator:

1. Consults with other departments, such as patient transportation, for integrated patient-centered services.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Four – Performance

The limited x-ray machine operator performs the action plan.

### *Rationale*

Quality patient services are provided through the safe and accurate performance of a deliberate plan of action.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Performs procedural timeout.
2. Implements an action plan.
3. Explains each step of the action plan to the patient as it occurs and elicits the cooperation of the patient.
4. Uses an integrated team approach.
5. Modifies the action plan according to changes in the clinical situation.
6. Administers first aid or provides life support.
7. Utilizes accessory equipment.
8. Assesses and monitors the patient's physical, emotional and mental status.
9. Positions patient for anatomic area of interest, respecting patient ability and comfort.
10. Immobilizes patient for procedure.

### *Specific Criteria*

The limited x-ray machine operator:

1. Employs proper radiation safety practices.
2. Performs radiographic procedures under the direction of a licensed independent practitioner or radiographer.
3. Utilizes technical factors according to equipment specifications to meet the ALARA principle.

4. Modifies normal protocol for optimal demonstration of anatomy under the direction of a licensed independent practitioner or radiographer.
5. Uses pre-exposure collimation and proper field-of-view selection.
6. Uses appropriate pre-exposure radiopaque markers for anatomical and procedural purposes.
7. Applies principles of medical aseptic technique.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Five – Evaluation

The limited x-ray machine operator determines whether the goals of the action plan have been achieved.

### *Rationale*

Careful examination of the procedure is important to determine that expected outcomes have been met.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Evaluates the patient and the procedure to identify variances that may affect the expected outcome.
2. Completes the evaluation process in a timely, accurate and comprehensive manner.
3. Measures the procedure against established policies, protocols and benchmarks.
4. Identifies exceptions to the expected outcome.
5. Develops a revised action plan to achieve the intended outcome.
6. Communicates revised action plan to appropriate team members.

### *Specific Criteria*

The limited x-ray machine operator:

1. Evaluates only images produced by self for positioning, the anatomy of interest and overall image quality.
2. Recognizes the need to adjust patient position or technical exposure factors to improve the quality of the examination.
3. Seeks assistance from a licensed independent practitioner or radiographer to improve the quality of the examination.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Six – Implementation

The limited x-ray machine operator implements the revised action plan.

### *Rationale*

It may be necessary to make changes to the action plan to achieve the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

5. Bases the revised plan on the patient's condition and the most appropriate means of achieving the expected outcome.
6. Takes action based on patient and procedural variances.
7. Measures and evaluates the results of the revised action plan.
8. Notifies appropriate health care provider when immediate clinical response is necessary based on procedural findings and patient condition.

### *Specific Criteria*

The limited x-ray machine operator:

1. Performs additional images that will produce the expected outcome based on patient condition and procedural variance under the direction of a licensed independent practitioner or radiographer.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Seven – Outcomes Measurement

The limited x-ray machine operator reviews and evaluates the outcome of the procedure.

### *Rationale*

To evaluate the quality of care, the limited x-ray machine operator compares the actual outcome with the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

5. Reviews all diagnostic or therapeutic data for completeness and accuracy.
6. Uses evidenced-based practice to determine whether the actual outcome is within established criteria.
7. Evaluates the process and recognizes opportunities for future changes.
8. Assesses the patient's physical, emotional and mental status prior to discharge.

### *Specific Criteria*

None added.

# Limited X-ray Machine Operator Clinical Performance Standards

## Standard Eight – Documentation

The limited x-ray machine operator documents information about patient care, the procedure and the final outcome.

### *Rationale*

Clear and precise documentation is essential for continuity of care, accuracy of care and quality assurance.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Documents diagnostic, treatment and patient data in the medical record in a timely, accurate and comprehensive manner.
2. Documents exceptions from the established criteria or procedures.
3. Provides pertinent information to authorized individual(s) involved in the patient's care.
4. Records information used for billing and coding procedures.
5. Archives images or data.

### *Specific Criteria*

The limited x-ray machine operator

1. Documents the use of shielding devices and proper radiation safety practices per institutional policy.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard One – Assessment

The limited x-ray machine operator collects pertinent information regarding equipment, procedures and the work environment.

### *Rationale*

The planning and provision of safe and effective medical services relies on the collection of pertinent information about equipment, procedures and the work environment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Determines that services are performed in a safe environment, minimizing potential hazards, in accordance with established guidelines.
2. Confirms that equipment performance, maintenance and operation comply with manufacturer's specifications.
3. Verifies that protocol and procedure manuals include recommended criteria and are reviewed and revised.

### *Specific Criteria*

The limited x-ray machine operator:

1. Maintains controlled access to restricted area during radiation exposure.
2. Follows federal and state guidelines to minimize radiation exposure levels.
3. Performs quality assurance activities with assistance from a licensed independent practitioner, radiographer or medical physicist.
4. Participates in radiation protection, patient safety, risk management and quality management activities.
5. Develops and maintains standardized exposure technique guidelines under the direction of a licensed independent practitioner or radiographer.
6. Wears one or more personal radiation monitoring devices at the level indicated on the personal radiation monitoring device or as indicated by the radiation safety officer or designee.



# Limited X-ray Machine Operator Quality Performance Standards

## Standard Two – Analysis/Determination

The limited x-ray machine operator analyzes information collected during the assessment phase to determine the need for changes to equipment, procedures or the work environment.

### *Rationale*

Determination of acceptable performance is necessary to provide safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

4. Assesses services, procedures and environment to meet or exceed established guidelines and adjusts the action plan.
5. Monitors equipment to meet or exceed established standards and adjusts the action plan.
6. Assesses and maintains the integrity of medical supplies such as a lot/expiration, sterility, etc.

### *Specific Criteria*

The limited x-ray machine operator:

1. Analyzes results of assessment activities under the direction of a licensed independent practitioner, radiographer and/or medical physicist.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard Three – Education

The limited x-ray machine operator informs the patient, public and other health care providers about procedures, equipment and facilities.

### *Rationale*

Open communication promotes safe practices.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

5. Elicits confidence and cooperation from the patient, the public and other health care providers by providing timely communication and effective instruction.
6. Presents explanations and instructions at the learner's level of understanding.
7. Educates the patient, public and other health care providers about procedures along with the biological effects of radiation, sound wave or magnetic field and protection.
8. Provides information to patients, health care providers, students and the public concerning the role and responsibilities of individuals in the profession.

### *Specific Criteria*

None added.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard Four – Performance

The limited x-ray machine operator performs quality assurance activities.

### *Rationale*

Quality assurance activities provide valid and reliable information regarding the performance of equipment, materials and processes.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Maintains current information on equipment, materials and processes.
2. Performs ongoing quality assurance activities.
3. Performs quality control testing of equipment.

### *Specific Criteria*

The limited x-ray machine operator:

1. Performs assessment activities under the direction of a licensed independent practitioner, radiographer or medical physicist.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard Five – Evaluation

The limited x-ray machine operator evaluates quality assurance results and establishes an appropriate action plan.

### *Rationale*

Equipment, materials and processes depend on ongoing quality assurance activities that evaluate performance based on established guidelines.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Validates quality assurance testing conditions and results.
2. Evaluates quality assurance results to accepted values.
3. Formulates an action plan.

### *Specific Criteria*

The limited x-ray machine operator:

1. Performs evaluations under the direction of a licensed independent practitioner, radiographer or medical physicist.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard Six – Implementation

The limited x-ray machine operator implements the quality assurance action plan for equipment, materials and processes.

### *Rationale*

Implementation of a quality assurance action plan promotes safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Obtains assistance to support the quality assurance action plan.
2. Implements the quality assurance action plan.

### *Specific Criteria*

The limited x-ray machine operator:

1. Implements the quality assurance action plan under the direction of a licensed independent practitioner, radiographer or medical physicist.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard Seven – Outcomes Measurement

The limited x-ray machine operator assesses the outcome of the quality management action plan for equipment, materials and processes.

### *Rationale*

Outcomes assessment is an integral part of the ongoing quality management action plan to enhance diagnostic and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

4. Reviews the implementation process for accuracy and validity.
5. Determines that actual outcomes are within established criteria.
6. Develops and implements a modified action plan.

### *Specific Criteria*

The limited x-ray machine operator:

1. Develops and implements a modified action plan under the direction of a licensed independent practitioner, radiographer or medical physicist.

# Limited X-ray Machine Operator Quality Performance Standards

## Standard Eight – Documentation

The limited x-ray machine operator documents quality assurance activities and results.

### *Rationale*

Documentation provides evidence of quality assurance activities designed to enhance safety.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

3. Maintains documentation of quality assurance activities, procedures and results in accordance with established guidelines.
4. Documents in a timely, accurate and comprehensive manner.

### *Specific Criteria*

The limited x-ray machine operator:

1. Documents quality assurance activities under the direction of a licensed independent practitioner, radiographer and/or medical physicist.

# Limited X-ray Machine Operator Professional Performance Standards

## Standard One – Quality

The limited x-ray machine operator strives to provide optimal patient care.

### *Rationale*

Patients expect and deserve optimal care during diagnosis and treatment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

7. Collaborates with others to elevate the quality of care.
8. Participates in ongoing quality assurance programs.
9. Adheres to standards, policies and established guidelines.
4. Anticipates and responds to patient needs.
5. Respects cultural variations.

### *Specific Criteria*

The limited x-ray machine operator:

1. Applies clinical judgment and discretion while performing radiographic procedures.



# Limited X-ray Machine Operator Professional Performance Standards

## Standard Two – Self-Assessment

The limited x-ray machine operator evaluates personal performance.

### *Rationale*

Self-assessment is necessary for personal growth and professional development.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Possesses personal work ethics, behaviors and attitudes.
2. Evaluates performance and recognizes opportunities for educational growth and improvement.
3. Participates in professional societies and organizations.

### *Specific Criteria*

The limited x-ray machine operator:

1. Recognizes and applies personal and clinical strengths.

# Limited X-ray Machine Operator Professional Performance Standards

## Standard Three – Education

The limited x-ray machine operator acquires and maintains current knowledge in practice.

### *Rationale*

Advancements in the profession require additional knowledge and skills through education.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Completes education related to practice.
2. Participates in continuing education to maintain and enhance competency and performance.
3. Shares knowledge and expertise with others.

### *Specific Criteria*

The limited x-ray machine operator:

1. Maintains license related to practice.

# Limited X-ray Machine Operator Professional Performance Standards

## Standard Four – Collaboration and Collegiality

The limited x-ray machine operator promotes a positive and collaborative practice atmosphere with other members of the health care team.

### *Rationale*

To provide quality patient care, all members of the health care team must communicate effectively and work together efficiently.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

4. Shares knowledge and expertise with members of the health care team.
5. Develops collaborative partnerships to enhance quality and efficiency.
6. Promotes understanding of the profession.

### *Specific Criteria*

None added.

# Limited X-ray Machine Operator Professional Performance Standards

## Standard Five – Ethics

The limited x-ray machine operator adheres to the profession's accepted ethical standards.

### *Rationale*

Decisions made and actions taken on behalf of the patient are based on a sound ethical foundation.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Provides health care services with respect for the patient's dignity, age-specific needs and culture.
2. Acts as a patient advocate.
3. Takes responsibility for decisions made and actions taken.
4. Delivers patient care and service free from bias or discrimination.
5. Respects the patient's right to privacy and confidentiality.
6. Adheres to the established practice standards of the profession.

### *Specific Criteria*

None added.

# Limited X-ray Machine Operator Professional Performance Standards

## Standard Six – Research and Innovation

The limited x-ray machine operator participates in the acquisition and dissemination of knowledge and the advancement of the profession.

### *Rationale*

Scholarly activities such as research, scientific investigation, presentation and publication advance the profession.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The limited x-ray machine operator:

1. Reads and evaluates research relevant to the profession.
2. Participates in data collection.
3. Investigates innovative methods for application in practice.
4. Shares information through publication, presentation and collaboration.
5. Adopts new best practices.
6. Pursues lifelong learning.

### *Specific Criteria*

The limited x-ray machine operator:

1. Investigates avenues to continue progress to become a registered radiographer.

## **Limited X-ray Machine Operator Advisory Opinion Statements**

Placement of Personal Radiation Monitoring Devices.

***Main Motion C-13.09***

**Rescind the Position Statement “Definition of Limited X-ray Machine Operator”**

The Practice Standards Council moves to rescind the position statement titled “Definition of Limited X-ray Machine Operator.”

**Definition of Limited X-ray Machine Operator**

It is the position of the American Society of Radiologic Technologists that a limited x-ray machine operator is defined as an individual other than a radiologic technologist who performs static diagnostic x-ray procedures on selected anatomical sites. Limited x-ray machine operator is the term that replaces other terms including, but not limited to, radiologic technician, x-ray technician and limited permittee.

***Main Motion C-13.10***

**Rescind the Position Statement “Evaluating Medical Images for Technical Adequacy”**

The Practice Standards Council moves to rescind the position statement titled “Evaluating Medical Images for Technical Adequacy.”

**Evaluating Medical Images for Technical Adequacy**

It is the position of the American Society of Radiologic Technologists that the technical adequacy of medical images produced by a registered or licensed radiologic technologist only be evaluated by a registered radiologic technologist within their scope of practice.

***Main Motion C-13.11***

**Rescind the Position Statement “Limited X-Ray Machine Operator Education and Examination”**

The Practice Standards Council moves to rescind the position statement titled “Limited X-Ray Machine Operator Education and Examination.”

**Limited X-Ray Machine Operator Education and Examination**

It is the position of the American Society of Radiologic Technologists that the educational requirements for limited x-ray machine operators meet the ASRT Limited X-ray Machine Operator Curriculum and examinees successfully pass the American Registry of Radiologic Technologists limited scope of practice exam.

*Main Motion C-13.12*

**Rescind the Position Statement “Limited X-Ray Machine Operator Scope of Practice”**

The Practice Standards Council moves to rescind the position statement titled “Limited X-Ray Machine Operator Scope of Practice.”

**Limited X-Ray Machine Operator Scope of Practice**

It is the position of the American Society of Radiologic Technologists that the limited x-ray machine operator's scope of practice be restricted to practices covered in the ASRT curriculum for limited x-ray machine operators. Procedures excluded from the LXMO scope of practice include fluoroscopy, contrast procedures, computed tomography, mammography and mobile imaging.

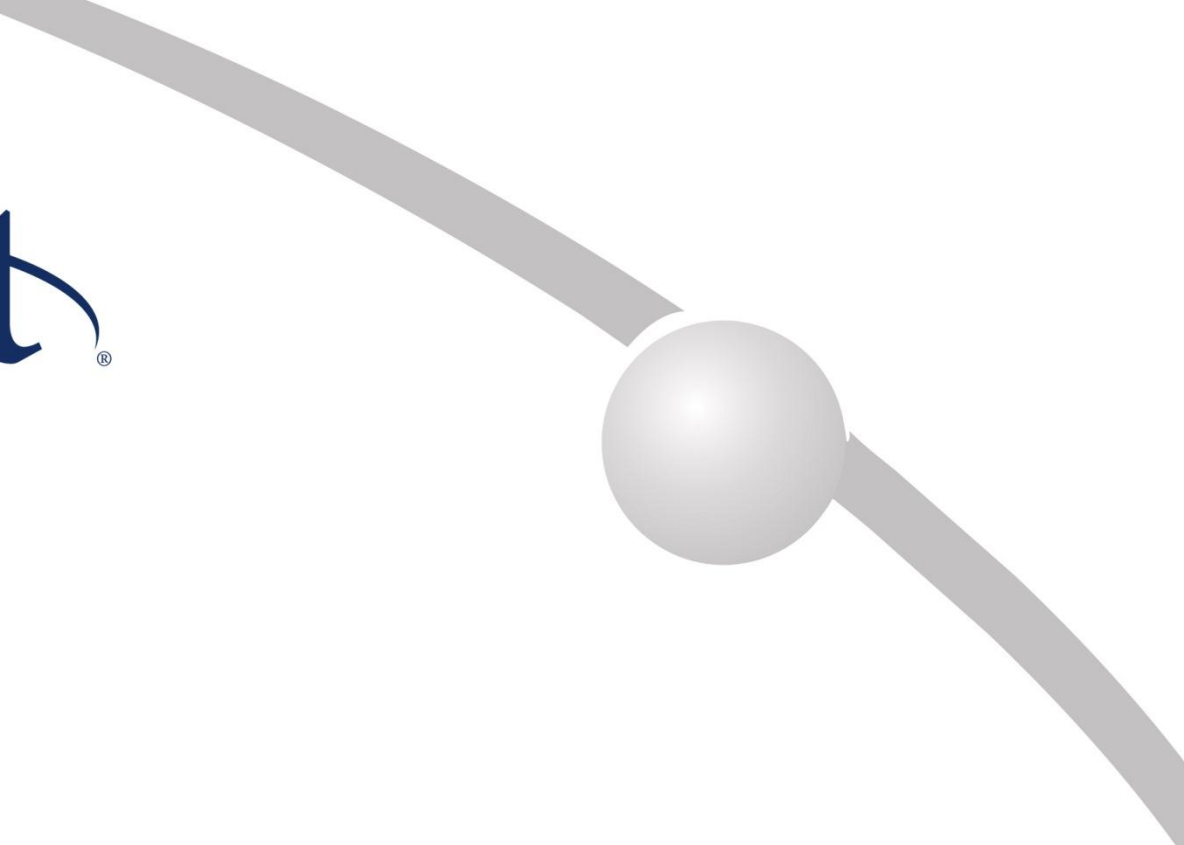


***Main Motion C-13.13***

**Amend the Nuclear Medicine Practice Standards**

The Practice Standards Council moves to amend the Nuclear Medicine Practice Standards, pages NM 1-32, by:

- Substitution.

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# The Practice Standards for Medical Imaging and Radiation Therapy

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## Nuclear Medicine Practice Standards

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## Preface to Practice Standards

A profession's practice standards serve as a guide for appropriate practice. The practice standards define the practice and establish general criteria to determine compliance. Practice standards are authoritative statements established by the profession for judging the quality of practice, service and education provided by individuals who practice in medical imaging and radiation therapy.

Practice standards can be used by individual facilities to develop job descriptions and practice parameters. Those outside the imaging, therapeutic and radiation science community can use the standards as an overview of the role and responsibilities of the individual as defined by the profession.

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### Format

The Practice Standards for Medical Imaging and Radiation Therapy are divided into six sections: introduction, scope of practice, clinical performance, quality performance, professional performance and advisory opinion statements.

*Introduction.* The introduction provides definitions for the practice and the education and certification for individuals in addition to an overview of the specific practice.

*Scope of Practice.* The scope of practice delineates the parameters of the specific practice.

*Clinical Performance Standards.* The clinical performance standards define the activities of the individual in the care of patients and delivery of diagnostic or therapeutic procedures. The section incorporates patient assessment and management with procedural analysis, performance and evaluation.

*Quality Performance Standards.* The quality performance standards define the activities of the individual in the technical areas of performance including equipment and material assessment, safety standards and total quality management.

*Professional Performance Standards.* The professional performance standards define the activities of the individual in the areas of education, interpersonal relationships, self-assessment and ethical behavior.

*Advisory Opinion Statements.* The advisory opinions are interpretations of the standards intended for clarification and guidance for specific practice issues.

Each performance standards section is subdivided into individual standards. The standards are numbered and followed by a term or set of terms that identify the standards, such as “assessment” or “analysis/determination.” The next statement is the expected performance of the individual when performing the procedure or treatment. A rationale statement follows and explains why an individual should adhere to the particular standard of performance.

*Criteria.* Criteria are used in evaluating an individual’s performance. Each set is divided into two parts: the general criteria and the specific criteria. Both criteria should be used when evaluating performance.

*General Criteria.* General criteria are written in a style that applies to imaging and radiation science individuals. These criteria are the same in all of the practice standards, with the exception of limited x-ray machine operators, and should be used for the appropriate area of practice.

*Specific Criteria.* Specific criteria meet the needs of the individuals in the various areas of professional performance. While many areas of performance within imaging and radiation sciences are similar, others are not. The specific criteria are drafted with these differences in mind.

# Introduction to Nuclear Medicine Practice Standards

## Definition

The practice of nuclear medicine and molecular imaging is performed by a segment of health care professionals responsible for the administration of ionizing radiation (x-rays in the performance of computed tomography and radioactive material), radiofrequencies in a magnetic field (magnetic resonance imaging) and medications to patients for diagnostic, therapeutic or research purposes. Radioactive materials, medications and imaging and nonimaging equipment are used in nuclear medicine and molecular imaging to study various organs, body systems and samples to aid in the diagnosis, treatment and treatment planning of various pathological conditions.-

Although an interdisciplinary team of clinicians, nuclear medicine technologists and support staff plays a critical role in the delivery of health services, it is the nuclear medicine technologist who performs the nuclear medicine and molecular imaging procedure or treatment at the request of and for interpretation by a licensed independent practitioner.

Nuclear medicine and molecular imaging technology integrates scientific knowledge, technical skills, patient interaction and compassionate care. Nuclear medicine technologists must demonstrate an understanding of human anatomy and physiology, chemistry, physics, mathematics, medical terminology and pharmacology.

Nuclear medicine technologists must maintain a high degree of accuracy. They must possess, utilize and maintain knowledge about radiation safety principles. Nuclear medicine technologists independently perform or assist the licensed independent practitioner in the completion of nuclear medicine and molecular imaging procedures and treatments. The nuclear medicine technologist prepares and administers ionizing radiation (x-ray in the performance of computed tomography and radioactive material), radiofrequencies with in a magnetic field (magnetic resonance) and medications in accordance with state and federal regulations.

Nuclear medicine technologists are the primary liaison between patients, licensed independent practitioners and other members of the health care team. Nuclear medicine technologists must remain sensitive to the needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. As members of the health care team, nuclear medicine technologists participate in quality improvement processes and continually assess their professional performance.

Nuclear medicine technologists think critically and use independent, professional and ethical judgment in all aspects of their work. They engage in continuing education to include their area of practice to enhance patient care, radiation safety, public education, knowledge and technical competence.

## Education and Certification

Nuclear medicine technologists prepare for their role on the interdisciplinary team by successfully completing a program in Nuclear Medicine that is programmatically accredited or part of an institution that is regionally accredited and attaining appropriate primary certification by the American Registry of Radiologic Technologists (ARRT) or the Nuclear Medicine Technology Certification Board (NMTCB). Those passing the ARRT examination use the credential R.T.(N). Those passing the NMTCB examination use the credential CNMT.

Eligibility to take the postprimary examinations in nuclear cardiology and/or positron emission tomography requires appropriate primary certification at the time of examination and documentation of clinical experience. Those who successfully complete these examinations may use the credentials CNMT-NCT and/or CNMT-PET.

Nuclear medicine technologists performing computed tomography or magnetic resonance imaging prepare for those roles by attaining certification by the ARRT. Eligibility to take the postprimary examinations in computed tomography and/or magnetic resonance imaging requires appropriate primary certification at the time of examination and documentation of clinical experience in specific procedures. Those who successfully complete these examinations may use the credentials R.T.(CT) and/or R.T.(MR).

To maintain ARRT and/or NMTCB certification, nuclear medicine technologists must complete appropriate continuing education requirements to sustain a level of expertise and awareness of changes and advances in practice.

## Overview

Nuclear medicine technologists are part of the interdisciplinary team that plays a critical role in the delivery of health services as new modalities emerge and the need for imaging and nonimaging procedures increases. A comprehensive procedure list for the nuclear medicine technologist is impractical because clinical activities vary by practice needs. As the field of nuclear medicine and molecular imaging advances, the clinical activities for the nuclear medicine technologist may evolve.

State statute, regulation or lawful community custom may dictate practice parameters. *Wherever there is a conflict between these standards and state or local statutes or regulations, the state or local statutes or regulations supersede these standards.* A nuclear medicine technologist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

## **Nuclear Medicine Technologist Scope of Practice**

The scope of practice of the medical imaging and radiation therapy professional includes:

- Receiving, relaying and documenting verbal, written and electronic orders in the patient's medical record.
- Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed independent practitioner.
- Verifying informed consent.
- Assuming responsibility for patient needs during procedures.
- Preparing patients for procedures.
- Applying principles of ALARA to minimize exposure to patient, self and others.
- Performing venipuncture as prescribed by a licensed independent practitioner.
- Starting and maintaining intravenous access as prescribed by a licensed independent practitioner.
- Identifying, preparing and/or administering medications as prescribed by a licensed independent practitioner.
- Evaluating images for technical quality, ensuring proper identification is recorded.
- Identifying and managing emergency situations.
- Providing education.
- Educating and monitoring students and other health care providers.
- Performing ongoing quality assurance activities.

The scope of practice of the nuclear medicine technologist also includes:

1. Performing procedures or examinations upon the order of a licensed independent practitioner for diagnostic interpretation and therapeutic procedures.
2. Identifying, preparing and/or administering ionizing radiation (x-ray in the performance of computed tomography and radioactive material) and radiofrequencies within a

magnetic field (magnetic resonance) as prescribed by a licensed independent practitioner.

3. Providing optimal patient care by applying established and accepted protocols.
4. Continually evaluating responsibilities and methods with recommendations for expansion of the profession.
5. Assisting in maintaining records, respecting confidentiality and established policy.



# Nuclear Medicine Clinical Performance Standards

## Standard One – Assessment

The nuclear medicine technologist collects pertinent data about the patient and the procedure.

### *Rationale*

Information about the patient's health status is essential in providing appropriate imaging and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

1. Gathers relevant information from the patient, medical record, significant others and health care providers.
2. Reconfirms patient identification and verifies the procedure requested or prescribed.
3. Reviews the patient's medical record to verify the appropriateness of a specific examination or procedure.
4. Verifies the patient's pregnancy status.
5. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation or artifacts.
6. Recognizes signs and symptoms of an emergency.

### *Specific Criteria*

The nuclear medicine technologist:

1. Locates and reviews previous examinations and/or procedures for comparison.
2. Identifies and removes artifact-producing objects.
3. Verifies the patient's lactation status.
4. Verifies the patient's menstrual cycle.

# Nuclear Medicine Clinical Performance Standards

## Standard Two – Analysis/Determination

The nuclear medicine technologist analyzes the information obtained during the assessment phase and develops an action plan for completing the procedure.

### *Rationale*

Determining the most appropriate action plan enhances patient safety and comfort, optimizes diagnostic and therapeutic quality and improves efficiency.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

7. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.
8. Employs professional judgment to adapt imaging and therapeutic procedures to improve diagnostic quality and therapeutic outcome.
9. Consults appropriate medical personnel to determine a modified action plan.
10. Determines the need for and selects supplies, accessory equipment, shielding and immobilization devices.
11. Determines the course of action for an emergency or problem situation.
12. Determines that all procedural requirements are in place to achieve a quality diagnostic or therapeutic procedure.

### *Specific Criteria*

The nuclear medicine technologist:

1. Selects detector and optimal collimator to perform procedure.
2. Determines radionuclide dosage based on patient's age, weight, medical and physical status.
3. Reviews the patient's medical record and the examination request to determine optimal procedure parameters for clinical indications.
4. Determines patient compliance with pre-examination preparation and instructions.

# Nuclear Medicine Clinical Performance Standards

## Standard Three – Patient Education

The nuclear medicine technologist provides information about the procedure and related health issues according to protocol.

### *Rationale*

Communication and education are necessary to establish a positive relationship.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

6. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The nuclear medicine technologist verifies that written or informed consent has been obtained.
7. Provides accurate explanations and instructions at an appropriate time and at a level the patients and their care providers can understand. Addresses patient questions and concerns regarding the procedure.
8. Refers questions about diagnosis, treatment or prognosis to a licensed independent practitioner.
9. Provides related patient education.
10. Explains precautions regarding administration of medications.

### *Specific Criteria*

The nuclear medicine technologist:

1. Instructs patient and others regarding exam preparation prior to.
2. Provides instruction to patient regarding reduction of radiation exposure to self and others postprocedure.
3. Provides information regarding risks and benefits of ionizing radiation (x-ray in the performance of computed tomography and radioactive material) and radiofrequencies within a magnetic field (magnetic resonance).

# Nuclear Medicine Clinical Performance Standards

## Standard Four – Performance

The nuclear medicine technologist performs the action plan.

### *Rationale*

Quality patient services are provided through the safe and accurate performance of a deliberate plan of action.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

1. Performs procedural timeout.
2. Implements an action plan.
3. Explains each step of the action plan to the patient as it occurs and elicits the cooperation of the patient.
4. Uses an integrated team approach.
5. Modifies the action plan according to changes in the clinical situation.
6. Administers first aid or provides life support.
7. Utilizes accessory equipment.
8. Assesses and monitors the patient's physical, emotional and mental status.
9. Applies principles of sterile technique.
10. Positions patient for anatomic area of interest, respecting patient ability and comfort.
11. Immobilizes patient for procedure.
12. Monitors the patient for reactions to medications.

### *Specific Criteria*

The nuclear medicine technologist:

1. Prepares and administers ionizing radiation (x-ray in the performance of computed tomography and radioactive material) and radiofrequencies within a magnetic field (magnetic resonance) and medications.
2. Injects radioactive material and/or medication in peripherally inserted central catheter lines or ports.
3. Utilizes shielding devices.
4. Monitors imaging production to determine variance from established quality standards.
5. Determines optimum placement of ECG electrodes.

# Nuclear Medicine Clinical Performance Standards

## Standard Five – Evaluation

The nuclear medicine technologist determines whether the goals of the action plan have been achieved.

### *Rationale*

Careful examination of the procedure is important to determine that expected outcomes have been met.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

1. Evaluates the patient and the procedure to identify variances that may affect the expected outcome.
2. Completes the evaluation process in a timely, accurate and comprehensive manner.
3. Measures the procedure against established policies, protocols and benchmarks.
4. Identifies exceptions to the expected outcome.
5. Develops a revised action plan to achieve the intended outcome.
6. Communicates revised action plan to appropriate team members.

### *Specific Criteria*

The nuclear medicine technologist:

1. Reviews procedure to determine if additional images or data will enhance the diagnostic value.
2. Processes images for evaluation by a licensed independent practitioner.
3. Consults with a licensed independent practitioner to confirm diagnostic completeness.

# Nuclear Medicine Clinical Performance Standards

## Standard Six – Implementation

The nuclear medicine technologist implements the revised action plan.

### *Rationale*

It may be necessary to make changes to the action plan to achieve the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

5. Bases the revised plan on the patient's condition and the most appropriate means of achieving the expected outcome.
6. Takes action based on patient and procedural variances.
7. Measures and evaluates the results of the revised action plan.
8. Notifies appropriate health care provider when immediate clinical response is necessary based on procedural findings and patient condition.

### *Specific Criteria*

The nuclear medicine technologist:

1. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.
2. Assesses procedure for technical quality and makes technical modifications to the data presentations.
3. Performs additional images or data collection as needed.

# Nuclear Medicine Clinical Performance Standards

## Standard Seven – Outcomes Measurement

The nuclear medicine technologist reviews and evaluates the outcome of the procedure.

### *Rationale*

To evaluate the quality of care, the nuclear medicine technologist compares the actual outcome with the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

5. Reviews all diagnostic or therapeutic data for completeness and accuracy.
6. Uses evidenced-based practice to determine whether the actual outcome is within established criteria.
7. Evaluates the process and recognizes opportunities for future changes.
8. Assesses the patient's physical, emotional and mental status prior to discharge.

### *Specific Criteria*

None added.



# Nuclear Medicine Clinical Performance Standards

## Standard Eight – Documentation

The nuclear medicine technologist documents information about patient care, the procedure and the final outcome.

### *Rationale*

Clear and precise documentation is essential for continuity of care, accuracy of care and quality assurance.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

15. Documents diagnostic, treatment and patient data in the medical record in a timely, accurate and comprehensive manner.
16. Documents exceptions from the established criteria or procedures.
17. Provides pertinent information to authorized individual(s) involved in the patient's care.
18. Records information used for billing and coding procedures.
19. Archives images or data.
20. Verifies patient consent is documented.
21. Documents procedural timeout.

### *Specific Criteria*

The nuclear medicine technologist:

1. Maintains records of the receipt, administration and disposal of radioactive materials.
2. Documents administered dosage and route of administration.

# Nuclear Medicine Quality Performance Standards

## Standard One – Assessment

The nuclear medicine technologist collects pertinent information regarding equipment, procedures and the work environment.

### *Rationale*

The planning and provision of safe and effective medical services relies on the collection of pertinent information about equipment, procedures and the work environment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

7. Determines that services are performed in a safe environment, minimizing potential hazards, in accordance with established guidelines.
8. Confirms that equipment performance, maintenance and operation comply with manufacturer's specifications.
9. Verifies that protocol and procedure manuals include recommended criteria and are reviewed and revised.

### *Specific Criteria*

The nuclear medicine technologist:

1. Performs area monitoring and surveys to assess radiation exposure levels and contamination sites.
2. Complies with federal and state laws to minimize radiation exposure levels.
3. Maintains controlled access to restricted area during radiation exposure.
4. Participates in radiation protection, patient safety, risk management and quality management activities.
5. Wears one or more personal radiation monitoring devices at the level indicated on the personal radiation monitoring device or as indicated by the radiation safety officer or designee.
6. A ring badge should be worn on the dominant hand with the label facing the radiation source.

# Nuclear Medicine Quality Performance Standards

## Standard Two – Analysis/Determination

The nuclear medicine technologist analyzes information collected during the assessment phase to determine the need for changes to equipment, procedures or the work environment.

### *Rationale*

Determination of acceptable performance is necessary to provide safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

4. Assesses services, procedures and environment to meet or exceed established guidelines and adjusts the action plan.
5. Monitors equipment to meet or exceed established standards and adjusts the action plan.
6. Assesses and maintains the integrity of medical supplies such as a lot/expiration, sterility, etc.

### *Specific Criteria*

The nuclear medicine technologist:

1. Evaluates results of quality control testing on radioactive material for compliance.

# Nuclear Medicine Quality Performance Standards

## Standard Three – Education

The nuclear medicine technologist informs the patient, public and other health care providers about procedures, equipment and facilities.

### *Rationale*

Open communication promotes safe practices.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

5. Elicits confidence and cooperation from the patient, the public and other health care providers by providing timely communication and effective instruction.
6. Presents explanations and instructions at the learner's level of understanding.
7. Educates the patient, public and other health care providers about procedures along with the biological effects of radiation, sound wave or magnetic field and protection.
8. Provides information to patients, health care providers, students and the public concerning the role and responsibilities of individuals in the profession.

### *Specific Criteria*

None added.

# Nuclear Medicine Quality Performance Standards

## Standard Four – Performance

The nuclear medicine technologist performs quality assurance activities.

### *Rationale*

Quality assurance activities provide valid and reliable information regarding the performance of equipment, materials and processes.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

1. Maintains current information on equipment, materials and processes.
2. Performs ongoing quality assurance activities.
3. Performs quality control testing of equipment.

### *Specific Criteria*

The nuclear medicine technologist:

1. Complies with radiation protection rules and standards.
2. Utilizes radiation detecting equipment.
3. Demonstrates safe handling, storage and disposal of radioactive materials.
4. Monitors shielding effectiveness.

# Nuclear Medicine Quality Performance Standards

## Standard Five – Evaluation

The nuclear medicine technologist evaluates quality assurance results and establishes an appropriate action plan.

### *Rationale*

Equipment, materials and processes depend on ongoing quality assurance activities that evaluate performance based on established guidelines.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

7. Validates quality assurance testing conditions and results.
8. Evaluates quality assurance results.
9. Formulates an action plan.

### *Specific Criteria*

None added.

# Nuclear Medicine Quality Performance Standards

## Standard Six – Implementation

The nuclear medicine technologist implements the quality assurance action plan for equipment, materials and processes.

### *Rationale*

Implementation of a quality assurance action plan promotes safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

3. Obtains assistance to support the quality assurance action plan.
4. Implements the quality assurance action plan.

### *Specific Criteria*

The nuclear medicine technologist:

1. Employs devices to minimize radiation levels.
2. Uses decontamination procedures.

# Nuclear Medicine Quality Performance Standards

## Standard Seven – Outcomes Measurement

The nuclear medicine technologist assesses the outcome of the quality management action plan for equipment, materials and processes.

### *Rationale*

Outcomes assessment is an integral part of the ongoing quality management action plan to enhance diagnostic and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

4. Reviews the implementation process for accuracy and validity.
5. Determines that actual outcomes are within established criteria.
6. Develops and implements a modified action plan.

### *Specific Criteria*

None added.



# Nuclear Medicine Quality Performance Standards

## Standard Eight – Documentation

The nuclear medicine technologist documents quality assurance activities and results.

### *Rationale*

Documentation provides evidence of quality assurance activities designed to enhance safety.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

5. Maintains documentation of quality assurance activities, procedures and results in accordance with established guidelines.
  
6. Documents in a timely, accurate and comprehensive manner.

### *Specific Criteria*

The nuclear medicine technologist:

1. Documents radioactive materials quality testing procedures and maintains results for inspection.
  
2. Documents instrumentation quality testing procedures and maintains results for review.

# Nuclear Medicine Professional Performance Standards

## Standard One – Quality

The nuclear medicine technologist strives to provide optimal patient care.

### *Rationale*

Patients expect and deserve optimal care during diagnosis and treatment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

7. Collaborates with others to elevate the quality of care.
8. Participates in ongoing quality assurance programs.
9. Adheres to standards, policies and established guidelines.
10. Applies professional judgment and discretion while performing diagnostic study or treatment.
11. Anticipates and responds to patient needs.
12. Respects cultural variations.

### *Specific Criteria*

The nuclear medicine technologist:

1. Performs procedures in accordance with the Nuclear Regulatory Commission (NRC) and/ or in agreement with state regulations.

# Nuclear Medicine Professional Performance Standards

## Standard Two – Self-Assessment

The nuclear medicine technologist evaluates personal performance.

### *Rationale*

Self-assessment is necessary for personal growth and professional development.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

1. Assesses personal work ethics, behaviors and attitudes.
2. Evaluates performance and recognizes opportunities for educational growth and improvement.
3. Recognizes and applies personal and professional strengths.
4. Participates in professional societies and organizations.

### *Specific Criteria*

None added.

# Nuclear Medicine Professional Performance Standards

## Standard Three – Education

The nuclear medicine technologist acquires and maintains current knowledge in practice.

### *Rationale*

Advancements in the profession require additional knowledge and skills through education.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

9. Completes education related to practice.
10. Maintains credentials and certification related to practice.
11. Participates in continuing education to maintain and enhance competency and performance.
12. Shares knowledge and expertise with others.

### *Specific Criteria*

None added.

# Nuclear Medicine Professional Performance Standards

## Standard Four – Collaboration and Collegiality

The nuclear medicine technologist promotes a positive and collaborative practice atmosphere with other members of the health care team.

### *Rationale*

To provide quality patient care, all members of the health care team must communicate effectively and work together efficiently.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

4. Shares knowledge and expertise with members of the health care team.
5. Develops collaborative partnerships to enhance quality and efficiency.
6. Promotes understanding of the profession.

### *Specific Criteria*

The nuclear medicine technologist:

1. Instructs others in radiation safety.

# Nuclear Medicine Professional Performance Standards

## Standard Five – Ethics

The nuclear medicine technologist adheres to the profession's accepted ethical standards.

### *Rationale*

Decisions made and actions taken on behalf of the patient are based on a sound ethical foundation.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

7. Provides health care services with respect for the patient's dignity, age-specific needs and culture.
8. Acts as a patient advocate.
9. Takes responsibility for decisions made and actions taken.
10. Delivers patient care and service free from bias or discrimination.
11. Respects the patient's right to privacy and confidentiality.
12. Adheres to the established practice standards of the profession.

### *Specific Criteria*

The nuclear medicine technologist:

1. Reports unsafe practices to the Radiation Safety Officer (RSO), Nuclear Regulatory Commission (NRC) and/or appropriate state agency.

# Nuclear Medicine Professional Performance Standards

## Standard Six – Research and Innovation

The nuclear medicine technologist participates in the acquisition and dissemination of knowledge and the advancement of the profession.

### *Rationale*

Scholarly activities such as research, scientific investigation, presentation and publication advance the profession.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The nuclear medicine technologist:

13. Reads and evaluates research relevant to the profession.
14. Participates in data collection.
15. Investigates innovative methods for application in practice.
16. Shares information through publication, presentation and collaboration.
17. Adopts new best practices.
18. Pursues lifelong learning.

### *Specific Criteria*

None added.

## **Nuclear Medicine Advisory Opinion Statements**

Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector.

Medication and Contrast Media Injections by Radiologic Technologists.

Medication Injection through Existing Vascular Access.

Placement of Personal Radiation Monitoring Devices.

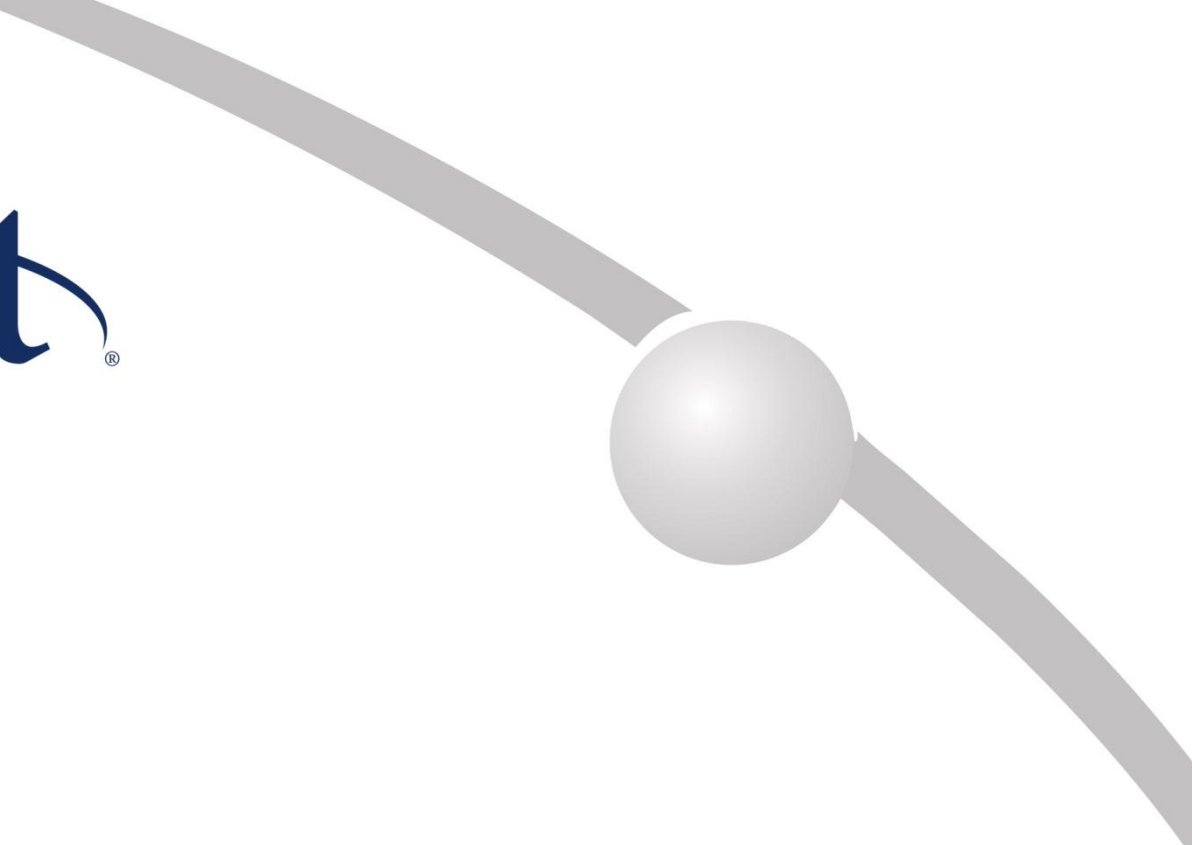


***Main Motion C-13.14***

**Amend the Radiography Practice Standards**

The Practice Standards Council moves to amend the Radiography Practice Standards, pages R 1-31, by:

- Substitution.

A decorative graphic consisting of a thick, grey diagonal line that starts from the top left and extends towards the top right. A large, grey, three-dimensional sphere is positioned where the line changes direction, appearing to be attached to it.

# The Practice Standards for Medical Imaging and Radiation Therapy

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## Radiography Practice Standards

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## Preface to Practice Standards

A profession's practice standards serve as a guide for appropriate practice. The practice standards define the practice and establish general criteria to determine compliance. Practice standards are authoritative statements established by the profession for judging the quality of practice, service and education provided by individuals who practice in medical imaging and radiation therapy.

Practice standards can be used by individual facilities to develop job descriptions and practice parameters. Those outside the imaging, therapeutic and radiation science community can use the standards as an overview of the role and responsibilities of the individual as defined by the profession.

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### Format

The Practice Standards for Medical Imaging and Radiation Therapy are divided into six sections: introduction, scope of practice, clinical performance, quality performance, professional performance and advisory opinion statements.

*Introduction.* The introduction provides definitions for the practice and the education and certification for individuals in addition to an overview of the specific practice.

*Scope of Practice.* The scope of practice delineates the parameters of the specific practice.

*Clinical Performance Standards.* The clinical performance standards define the activities of the individual in the care of patients and delivery of diagnostic or therapeutic procedures. The section incorporates patient assessment and management with procedural analysis, performance and evaluation.

*Quality Performance Standards.* The quality performance standards define the activities of the individual in the technical areas of performance including equipment and material assessment, safety standards and total quality management.

*Professional Performance Standards.* The professional performance standards define the activities of the individual in the areas of education, interpersonal relationships, self-assessment and ethical behavior.

*Advisory Opinion Statements.* The advisory opinions are interpretations of the standards intended for clarification and guidance for specific practice issues.

Each performance standards section is subdivided into individual standards. The standards are numbered and followed by a term or set of terms that identify the standards, such as “assessment” or “analysis/determination.” The next statement is the expected performance of the individual when performing the procedure or treatment. A rationale statement follows and explains why an individual should adhere to the particular standard of performance.

*Criteria.* Criteria are used in evaluating an individual’s performance. Each set is divided into two parts: the general criteria and the specific criteria. Both criteria should be used when evaluating performance.

*General Criteria.* General criteria are written in a style that applies to imaging and radiation science individuals. These criteria are the same in all of the practice standards, with the exception of limited x-ray machine operators, and should be used for the appropriate area of practice.

*Specific Criteria.* Specific criteria meet the needs of the individuals in the various areas of professional performance. While many areas of performance within imaging and radiation sciences are similar, others are not. The specific criteria are drafted with these differences in mind.

# Introduction to Radiography Practice Standards

## Definition

The practice of radiography is performed by health care professionals responsible for the administration of ionizing radiation for diagnostic, therapeutic or research purposes. A radiographer performs radiographic procedures at the request of and for interpretation by a licensed independent practitioner.

The complex nature of disease processes involves multiple imaging modalities. Although an interdisciplinary team of clinicians, radiographers and support staff plays a critical role in the delivery of health services, it is the radiographer who performs the radiographic procedure that creates the images needed for diagnosis.

Radiography integrates scientific knowledge, technical skills, patient interaction and compassionate care resulting in diagnostic information. Radiographers recognize patient conditions essential for successful completion of the procedure.

Radiographers must demonstrate an understanding of human anatomy, physiology, pathology and medical terminology.

Radiographers must maintain a high degree of accuracy in radiographic positioning and exposure technique. They must possess, utilize and maintain knowledge of radiation protection and safety. Radiographers independently perform or assist the licensed independent practitioner in the completion of radiographic procedures. Radiographers prepare, administer and document activities related to medications in accordance with state and federal regulations or lawful institutional policy.

Radiographers are the primary liaison between patients, licensed independent practitioners and other members of the support team. Radiographers must remain sensitive to needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. As members of the health care team, radiographers participate in quality improvement processes and continually assess their professional performance.

Radiographers think critically and use independent, professional and ethical judgment in all aspects of their work. They engage in continuing education to include their area of practice to enhance patient care, public education, knowledge and technical competence.

## Education and Certification

Radiographers prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiologic technology and attaining appropriate primary certification by the American Registry of Radiologic Technologists.

Those passing the ARRT examination use the credential R.T.(R).

To maintain ARRT certification, radiographers must complete appropriate continuing education and meet other requirements to sustain a level of expertise and awareness of changes and advances in practice.

### **Overview**

An interdisciplinary team of radiologists, radiographers and other support staff plays a critical role in the delivery of health services as new modalities emerge and the need for imaging procedures increases. A comprehensive procedure list for the radiographer is impractical because clinical activities vary by practice needs and expertise of the radiographer. As radiographers gain more experience, knowledge and clinical competence, the clinical activities for the radiographer may evolve.

State statute, regulation or lawful community custom may dictate practice parameters. *Wherever there is a conflict between these standards and state or local statutes or regulations, the state or local statutes or regulations supersede these standards.* A radiographer should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

## **Radiographer Scope of Practice**

The scope of practice of the medical imaging and radiation therapy professional includes:

- Receiving, relaying and documenting verbal, written and electronic orders in the patient's medical record.
- Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed independent practitioner.
- Verifying informed consent.
- Assuming responsibility for patient needs during procedures.
- Preparing patients for procedures.
- Applying principles of ALARA to minimize exposure to patient, self and others.
- Performing venipuncture as prescribed by a licensed independent practitioner.
- Starting and maintaining intravenous access as prescribed by a licensed independent practitioner.
- Identifying, preparing and/or administering medications as prescribed by a licensed independent practitioner.
- Evaluating images for technical quality, ensuring proper identification is recorded.
- Identifying and managing emergency situations.
- Providing education.
- Educating and monitoring students and other health care providers.
- Performing ongoing quality assurance activities.

The scope of practice of the radiographer also includes:

1. Performing diagnostic radiographic and noninterpretive fluoroscopic procedures as prescribed by a licensed independent practitioner.
2. Determining technical exposure factors.

3. Assisting licensed independent practitioner with fluoroscopic and specialized radiologic procedures.
4. Applying the principles of patient safety during all aspects of radiographic procedures, including assisting and transporting patients.



# Radiography Clinical Performance Standards

## Standard One – Assessment

The radiographer collects pertinent data about the patient and the procedure.

### *Rationale*

Information about the patient's health status is essential in providing appropriate imaging and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

1. Gathers relevant information from the patient, medical record, significant others and health care providers.
2. Reconfirms patient identification and verifies the procedure requested or prescribed.
3. Reviews the patient's medical record to verify the appropriateness of a specific examination or procedure.
4. Verifies the patient's pregnancy status.
5. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation or artifacts.
6. Recognizes signs and symptoms of an emergency.

### *Specific Criteria*

The radiographer:

1. Assesses patient risk for allergic reaction to medication prior to administration.
2. Locates and reviews previous examinations for comparison.
3. Identifies and removes artifact-producing objects.

# Radiography Clinical Performance Standards

## Standard Two – Analysis/Determination

The radiographer analyzes the information obtained during the assessment phase and develops an action plan for completing the procedure.

### *Rationale*

Determining the most appropriate action plan enhances patient safety and comfort, optimizes diagnostic and therapeutic quality and improves efficiency.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

13. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.
14. Employs professional judgment to adapt imaging and therapeutic procedures to improve diagnostic quality and therapeutic outcome.
15. Consults appropriate medical personnel to determine a modified action plan.
16. Determines the need for and selects supplies, accessory equipment, shielding and immobilization devices.
17. Determines the course of action for an emergency or problem situation.
18. Determines that all procedural requirements are in place to achieve a quality diagnostic or therapeutic procedure.

### *Specific Criteria*

The radiographer:

1. Reviews lab values prior to administering medication and beginning specialized radiologic procedures.
2. Determines type and dose of contrast agent to be administered, based on the patient's age, weight and medical/physical status.
3. Verifies that exposure indicator data for digital radiographic systems has not been altered or modified and is included in the Digital Imaging Communications in Medicine (DICOM) header and on images printed to media.

4. Analyzes digital images to determine utilization of appropriate imaging parameters.

# Radiography Clinical Performance Standards

## Standard Three – Patient Education

The radiographer provides information about the procedure and related health issues according to protocol.

### *Rationale*

Communication and education are necessary to establish a positive relationship.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

11. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The radiographer verifies that written or informed consent has been obtained.
12. Provides accurate explanations and instructions at an appropriate time and at a level the patients and their care providers can understand. Addresses patient questions and concerns regarding the procedure.
13. Refers questions about diagnosis, treatment or prognosis to a licensed independent practitioner.
14. Provides related patient education.
15. Explains precautions regarding administration of medications.

### *Specific Criteria*

The radiographer:

1. Consults with other departments for patient services.
2. Instructs patients regarding preparation prior to imaging procedures, including providing information about oral or bowel preparation and allergy preparation.

# Radiography Clinical Performance Standards

## Standard Four – Performance

The radiographer performs the action plan.

### *Rationale*

Quality patient services are provided through the safe and accurate performance of a deliberate plan of action.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

1. Performs procedural timeout.
2. Implements an action plan.
3. Explains each step of the action plan to the patient as it occurs and elicits the cooperation of the patient.
4. Uses an integrated team approach.
5. Modifies the action plan according to changes in the clinical situation.
6. Administers first aid or provides life support.
7. Utilizes accessory equipment.
8. Assesses and monitors the patient's physical, emotional and mental status.
9. Applies principles of sterile technique.
10. Positions patient for anatomic area of interest, respecting patient ability and comfort.
11. Immobilizes patient for procedure.
12. Monitors the patient for reactions to medications.

### *Specific Criteria*

The radiographer:

1. Employs proper radiation safety practices.

2. Utilizes technical factors according to equipment specifications to meet the ALARA principle.
3. Uses pre-exposure collimation and proper field-of-view selection.
4. Uses appropriate pre-exposure radiopaque markers for anatomical and procedural purposes.
5. Selects the best position for the demonstration of anatomy.
6. Injects medication into peripherally inserted central catheter lines or ports.

# Radiography Clinical Performance Standards

## Standard Five – Evaluation

The radiographer determines whether the goals of the action plan have been achieved.

### *Rationale*

Careful examination of the procedure is important to determine that expected outcomes have been met.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

1. Evaluates the patient and the procedure to identify variances that may affect the expected outcome.
2. Completes the evaluation process in a timely, accurate and comprehensive manner.
3. Measures the procedure against established policies, protocols and benchmarks.
4. Identifies exceptions to the expected outcome.
5. Develops a revised action plan to achieve the intended outcome.
6. Communicates revised action plan to appropriate team members.

### *Specific Criteria*

The radiographer:

1. Evaluates images for positioning to demonstrate the anatomy of interest.
2. Evaluates images for optimal technical exposure factors.
3. Reviews images to determine if additional images will enhance the diagnostic value of the procedure.

# Radiography Clinical Performance Standards

## Standard Six – Implementation

The radiographer implements the revised action plan.

### *Rationale*

It may be necessary to make changes to the action plan to achieve the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

9. Bases the revised plan on the patient's condition and the most appropriate means of achieving the expected outcome.
10. Takes action based on patient and procedural variances.
11. Measures and evaluates the results of the revised action plan.
12. Notifies appropriate health care provider when immediate clinical response is necessary based on procedural findings and patient condition.

### *Specific Criteria*

The radiographer:

1. Performs additional images that will produce the expected outcomes based upon patient condition and procedural variances.



# Radiography Clinical Performance Standards

## Standard Seven – Outcomes Measurement

The radiographer reviews and evaluates the outcome of the procedure.

### *Rationale*

To evaluate the quality of care, the radiographer compares the actual outcome with the expected outcome.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

9. Reviews all diagnostic or therapeutic data for completeness and accuracy.
10. Uses evidenced-based practice to determine whether the actual outcome is within established criteria.
11. Evaluates the process and recognizes opportunities for future changes.
12. Assesses the patient's physical, emotional and mental status prior to discharge.

### *Specific Criteria*

None added.

# Radiography Clinical Performance Standards

## Standard Eight – Documentation

The radiographer documents information about patient care, the procedure and the final outcome.

### *Rationale*

Clear and precise documentation is essential for continuity of care, accuracy of care and quality assurance.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

22. Documents diagnostic, treatment and patient data in the medical record in a timely, accurate and comprehensive manner.
23. Documents exceptions from the established criteria or procedures.
24. Provides pertinent information to authorized individual(s) involved in the patient's care.
25. Records information used for billing and coding procedures.
26. Archives images or data.
27. Verifies patient consent is documented.
28. Documents procedural timeout.

### *Specific Criteria*

The radiographer:

1. Documents fluoroscopic time.
2. Documents radiation exposure.
3. Documents the use of shielding devices and proper radiation safety practices per institutional policy.

# Radiography Quality Performance Standards

## Standard One – Assessment

The radiographer collects pertinent information regarding equipment, procedures and the work environment.

### *Rationale*

The planning and provision of safe and effective medical services relies on the collection of pertinent information about equipment, procedures and the work environment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

10. Determines that services are performed in a safe environment, minimizing potential hazards, in accordance with established guidelines.
11. Confirms that equipment performance, maintenance and operation comply with manufacturer's specifications.
12. Verifies that protocol and procedure manuals include recommended criteria and are reviewed and revised.

### *Specific Criteria*

The radiographer:

7. Maintains controlled access to restricted area during radiation exposure.
8. Follows federal and state guidelines to minimize radiation exposure levels.
9. Maintains and performs quality control on radiation safety equipment such as aprons, thyroid shields, etc.
10. Develops and maintains standardized exposure technique guidelines for all equipment.
11. Participates in radiation protection, patient safety, risk management and quality management activities.
6. Reviews digital images for the purpose of monitoring radiation exposure.
7. Wears one or more personal radiation monitoring devices at the level indicated on the personal radiation monitoring device or as indicated by the radiation safety officer or designee.

# Radiography Quality Performance Standards

## Standard Two – Analysis/Determination

The radiographer analyzes information collected during the assessment phase to determine the need for changes to equipment, procedures or the work environment.

### *Rationale*

Determination of acceptable performance is necessary to provide safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

7. Assesses services, procedures and environment to meet or exceed established guidelines and adjusts the action plan.
8. Monitors equipment to meet or exceed established standards and adjusts the action plan.
9. Assesses and maintains the integrity of medical supplies such as a lot/expiration, sterility, etc.

### *Specific Criteria*

None added.

# Radiography Quality Performance Standards

## Standard Three – Education

The radiographer informs the patient, public and other health care providers about procedures, equipment and facilities.

### *Rationale*

Open communication promotes safe practices.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

9. Elicits confidence and cooperation from the patient, the public and other health care providers by providing timely communication and effective instruction.
10. Presents explanations and instructions at the learner's level of understanding.
11. Educates the patient, public and other health care providers about procedures along with the biological effects of radiation, sound wave or magnetic field and protection.
12. Provides information to patients, health care providers, students and the public concerning the role and responsibilities of individuals in the profession.

### *Specific Criteria*

None added.

# Radiography Quality Performance Standards

## Standard Four – Performance

The radiographer performs quality assurance activities.

### *Rationale*

Quality assurance activities provide valid and reliable information regarding the performance of equipment, materials and processes.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

1. Maintains current information on equipment, materials and processes.
2. Performs ongoing quality assurance activities.
3. Performs quality control testing of equipment.

### *Specific Criteria*

The radiographer:

1. Consults with medical physicist when performing the quality assurance tests.
2. Monitors image production to determine technical acceptability.
3. Performs routine archiving status checks.

# Radiography Quality Performance Standards

## Standard Five – Evaluation

The radiographer evaluates quality assurance results and establishes an appropriate action plan.

### *Rationale*

Equipment, materials and processes depend on ongoing quality assurance activities that evaluate performance based on established guidelines.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

10. Validates quality assurance testing conditions and results.
11. Evaluates quality assurance results.
12. Formulates an action plan.

### *Specific Criteria*

None added.

# Radiography Quality Performance Standards

## Standard Six – Implementation

The radiographer implements the quality assurance action plan for equipment, materials and processes.

### *Rationale*

Implementation of a quality assurance action plan promotes safe and effective services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

5. Obtains assistance to support the quality assurance action plan.
  
6. Implements the quality assurance action plan.

### *Specific Criteria*

None added.



# Radiography Quality Performance Standards

## Standard Seven – Outcomes Measurement

The radiographer assesses the outcome of the quality management action plan for equipment, materials and processes.

### *Rationale*

Outcomes assessment is an integral part of the ongoing quality management action plan to enhance diagnostic and therapeutic services.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

7. Reviews the implementation process for accuracy and validity.
8. Determines that actual outcomes are within established criteria.
9. Develops and implements a modified action plan.

### *Specific Criteria*

None added.

# Radiography Quality Performance Standards

## Standard Eight – Documentation

The radiographer documents quality assurance activities and results.

### *Rationale*

Documentation provides evidence of quality assurance activities designed to enhance safety.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

7. Maintains documentation of quality assurance activities, procedures and results in accordance with established guidelines.
  
8. Documents in a timely, accurate and comprehensive manner.

### *Specific Criteria*

None added.

# Radiography Professional Performance Standards

## Standard One – Quality

The radiographer strives to provide optimal patient care.

### *Rationale*

Patients expect and deserve optimal care during diagnosis and treatment.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

13. Collaborates with others to elevate the quality of care.
14. Participates in ongoing quality assurance programs.
15. Adheres to standards, policies and established guidelines.
16. Applies professional judgment and discretion while performing diagnostic study or treatment.
17. Anticipates and responds to patient needs.
18. Respects cultural variations.

### *Specific Criteria*

None added.

# Radiography Professional Performance Standards

## Standard Two – Self-Assessment

The radiographer evaluates personal performance.

### *Rationale*

Self-assessment is necessary for personal growth and professional development.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

1. Assesses personal work ethics, behaviors and attitudes.
2. Evaluates performance and recognizes opportunities for educational growth and improvement.
3. Recognizes and applies personal and professional strengths.
4. Participates in professional societies and organizations.

### *Specific Criteria*

None added.

# Radiography Professional Performance Standards

## Standard Three – Education

The radiographer acquires and maintains current knowledge in practice.

### *Rationale*

Advancements in the profession require additional knowledge and skills through education.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

13. Completes education related to practice.
14. Maintains credentials and certification related to practice.
15. Participates in continuing education to maintain and enhance competency and performance.
16. Shares knowledge and expertise with others.

### *Specific Criteria*

None added.

# Radiography Professional Performance Standards

## Standard Four – Collaboration and Collegiality

The radiographer promotes a positive and collaborative practice atmosphere with other members of the health care team.

### *Rationale*

To provide quality patient care, all members of the health care team must communicate effectively and work together efficiently.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

7. Shares knowledge and expertise with members of the health care team.
8. Develops collaborative partnerships to enhance quality and efficiency.
9. Promotes understanding of the profession.

### *Specific Criteria*

None added.

# Radiography Professional Performance Standards

## Standard Five – Ethics

The radiographer adheres to the profession's accepted ethical standards.

### *Rationale*

Decisions made and actions taken on behalf of the patient are based on a sound ethical foundation.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

13. Provides health care services with respect for the patient's dignity, age-specific needs and culture.
14. Acts as a patient advocate.
15. Takes responsibility for decisions made and actions taken.
16. Delivers patient care and service free from bias or discrimination.
17. Respects the patient's right to privacy and confidentiality.
18. Adheres to the established practice standards of the profession.

### *Specific Criteria*

None added.

# Radiography Professional Performance Standards

## Standard Six – Research and Innovation

The radiographer participates in the acquisition and dissemination of knowledge and the advancement of the profession.

### *Rationale*

Scholarly activities such as research, scientific investigation, presentation and publication advance the profession.

### *General Stipulation*

The individual must be educationally prepared and clinically competent as a prerequisite to professional practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards.

### *General Criteria*

The radiographer:

19. Reads and evaluates research relevant to the profession.
20. Participates in data collection.
21. Investigates innovative methods for application in practice.
22. Shares information through publication, presentation and collaboration.
23. Adopts new best practices.
24. Pursues lifelong learning.

### *Specific Criteria*

None added.



## **Radiography Advisory Opinion Statements**

Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector.

Medication and Contrast Media Injections by Radiologic Technologists.

Medication Injection through Existing Vascular Access.

Placement of Personal Radiation Monitoring Devices.

***Main Motion C-13.15***

**Rescind the Position Statement “Documentation of Patient Radiation Exposure and Shielding for Computed Tomography and Fluoroscopic Procedures”**

The Practice Standards Council moves to rescind the position statement titled “Documentation of Patient Radiation Exposure and Shielding for Computed Tomography and Fluoroscopic Procedures.”

**Documentation of Patient Radiation Exposure and Shielding for Computed Tomography and Fluoroscopic Procedures**

It is the position of the American Society of Radiologic Technologists that facilities document patient dose, patient dose indicator readings, patient exposure indicator readings or technical factors and use of shielding for computed tomography and fluoroscopic procedures.

***Main Motion C-13.16***

**Rescind the Position Statement “Ensuring Radiation Exposures Are As Low As Reasonably Achievable”**

The Practice Standards Council moves to rescind the position statement titled “Ensuring Radiation Exposures Are As Low As Reasonably Achievable.”

**Ensuring Radiation Exposures Are As Low As Reasonably Achievable**

It is the position of the American Society of Radiologic Technologists that all individuals performing medical imaging and radiation therapy procedures employ the “as low as reasonably achievable” (ALARA) principle to minimize patient and occupational radiation dose.

*Main Motion C-13.17*

**Rescind the Position Statement “Monitoring Patient Exposure During Utilization of Digital Radiography Systems”**

The Practice Standards Council moves to rescind the position statement titled “Monitoring Patient Exposure During Utilization of Digital Radiography Systems.”

**Monitoring Patient Exposure During Utilization of Digital Radiography Systems**

It is the position of the American Society of Radiologic Technologists that health care facilities using digital radiography systems monitor patient exposure. Exposure indicator data should be included in the Digital Imaging Communications in Medicine (DICOM) header for images sent to picture archiving and communication systems (PACS) or in the patient demographics field for images printed to film, and in either case should be part of the permanent patient record. The exposure indicator should not be altered to modify image appearance and should accurately record the exposure or exposure factors used in producing the image. Health care facilities should collect patient exposure range distributions and reject analyses as part of the quality assurance program. This exposure data should be reviewed routinely by the health care facility.

*Main Motion C-13.18*

**Rescind the Position Statement “Radiographic Technique Charts”**

The Practice Standards Council moves to rescind the position statement titled “Radiographic Technique Charts.”

**Radiographic Technique Charts**

It is the position of the American Society of Radiologic Technologists that radiographic technique charts be used by persons performing radiography and that all health care facilities make radiographic technique charts available to persons performing radiography.

*Main Motion C-13.18a*

**Amend the Position Statement “Radiographic Technique Charts”**

The Practice Standards Council moves to amend the position statement titled “Radiographic Technique Charts” by substitution.

**Motion to amend C-13.18.a**

By striking the words “technique chart” and inserting the words “Exposure Technique Guidelines” in the title, and to amend the proposed wording by striking the word “standardized” and inserting the word “optimal” and by inserting the words “an fluoroscopic” after the word radiographic.

**Radiographic Exposure Technique Guidelines**

It is the position of the American Society of Radiologic Technologists all health care facilities develop, maintain and make available optimal exposure technique guidelines for all radiographic and fluoroscopic equipment.

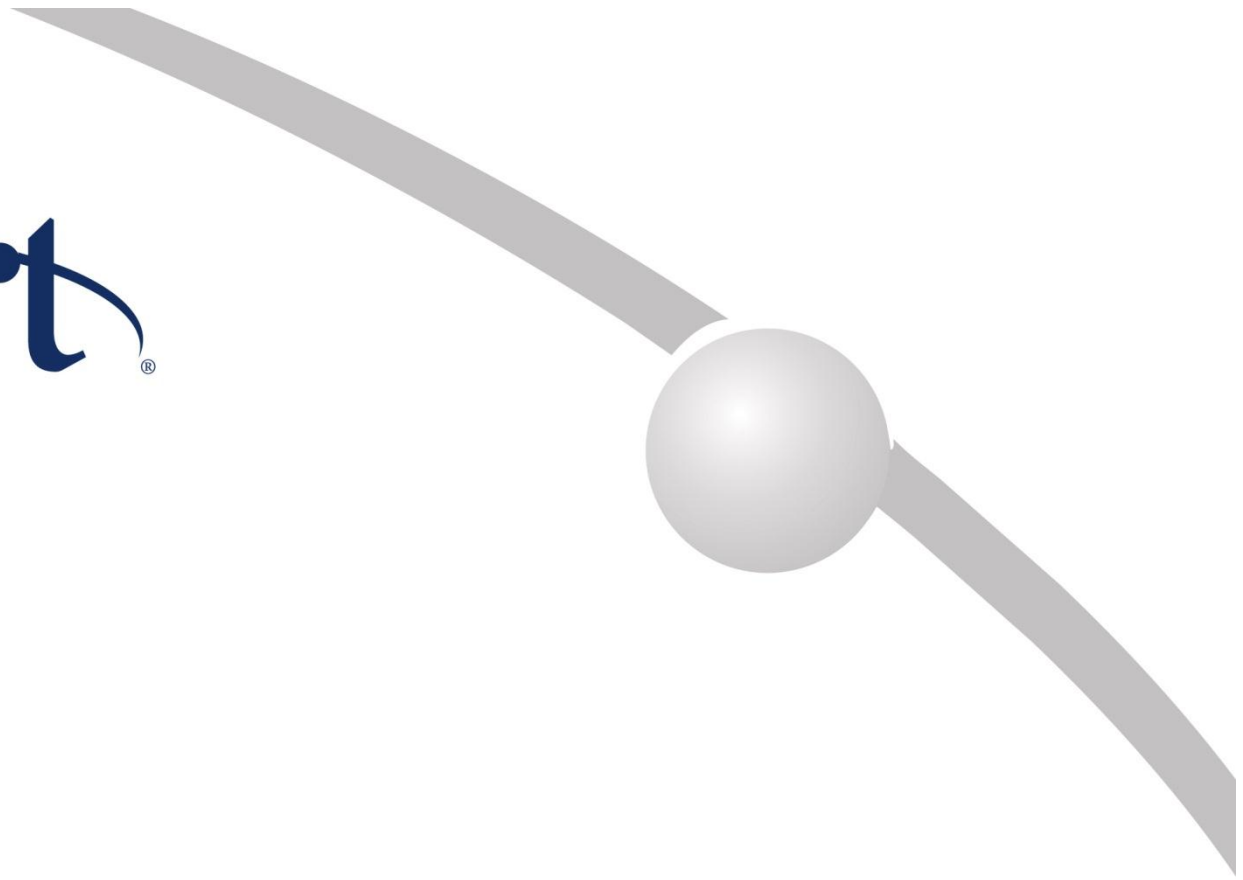
***Main Motion C-13.19***

**Amend the Practice Standards Glossary**

The Practice Standards Council moves to amend the Practice Standards Glossary, pages 2- 5, by:

- Substitution.

Motion to Amend substitute Practice Standards Glossary by inserting a definition for “education” referred to Practice Standards Council 142-2.



# The Practice Standards for Medical Imaging and Radiation Therapy

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## Glossary

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## **Glossary to The Practice Standards for Medical Imaging and Radiation Therapy**

**Accuracy** – Ability of the bone mineral densitometry system to measure the true value of an object.

**Act** - anything done, being done, or to be done; the process of doing. Synonymous with “procedure” and “clinical services”.

**Action plan** – A program or method developed prior to the performance of the procedure or treatment.

**Advanced-practice radiographer** – A registered technologist who has gained additional knowledge and skills through successful completion of an organized program or radiologic technology education that prepares radiologic technologists for advanced practice roles and has been recognized by the national certification organization to engage in the practice of advanced-practice radiologic technology.

**Anatomic (anatomical) landmarks** – Bones or other identifiable points that are visible or palpable and which indicate the position of hidden anatomy.

**Archive** – (archival) The storage of data in either hard (film) or soft (digital) form.

**Artifact** – A structure or feature produced by the technique used and not occurring naturally.

**As low as reasonably achievable (ALARA)** – Acronym for “as low as (is) reasonably achievable,” which means making every reasonable effort to maintain exposures to radiation as far below the dose limits as practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest. The ASRT recognizes the concept of ALARA to include energies used for magnetic resonance and sonographic imaging.

**Assess** – To determine the significance, importance or value.

**Assessment** – The process by which a patient’s condition is appraised or evaluated.

**Beam modification devices** – Devices that change the shape of the treatment field or distribution of the radiation at (tissue) depth.

**Blocks/custom made blocks** – Devices designed to shape the radiation field.

**Brachytherapy** – A type of radiation therapy in which radioactive material sealed in needles, seeds, wires or catheters is placed directly into or near a tumor. Also called implant radiation therapy, internal radiation therapy and radiation brachytherapy.

**Clinical** – Pertaining to or founded on actual observation and treatment of patients.

**Competency** – Performance in a manner that satisfies the demands of a situation.

**Contraindicate** – To warrant an otherwise advisable procedure or treatment inappropriate.

**Contrast Media** – Any internally administered substance that has a different opacity from soft tissue on radiography or computed tomography; includes barium, used to opacify parts of the gastrointestinal tract; water-soluble iodinated compounds, used to opacify blood vessels or the genitourinary tract; may refer to air occurring naturally or introduced into the body; also, paramagnetic substances used in magnetic resonance imaging.

**Customer** – Those internal and external individuals, departments and organizations that receive services or output or are the beneficiaries of the department's activities.

**Delegating radiologist** – A board-certified radiologist with appropriate clinical privileges.

**Digital Imaging Communications in Medicine (DICOM)** – The Digital Imaging and Communications in Medicine (DICOM) standards are a complex set of instructions to exchange and present medical image information.

**Disease** – A pathological condition of the body that presents a group of clinical signs, symptoms and laboratory findings peculiar to it and setting the condition apart as an abnormal entity differing from other normal or pathological conditions.

**Dose distributions** – Spatial representations of the magnitude of the dose produced by a source of radiation. They describe the variation of dose with position within an irradiated volume.

**Dosimetric calculations** – Computation of treatment unit settings, monitor units, treatment times and radiation doses to anatomical areas of interest.

**Electrocardiogram (ECG)** – A record of the electrical activity of the heart.

**Ethical** – Conforming to the norms or standards of professional conduct.

**Examination preparation** – The act of helping to ready a patient for a diagnostic imaging procedure.

**Fiducial markers** – Fixed reference points against which other objects can be measured. They may be placed internally, at skin surface or fixed externally to the patient.



**Immobilization device** (radiation therapy) – Device that assists in reproducing the treatment position while restricting patient movement (i.e., casts, masks or bite blocks).

**Initial observation** – Assessment of technical image quality with pathophysiology correlation communicated to a radiologist.

**Interpretation** – The process of examining and analyzing all images within a given procedure and integration of the imaging data with appropriate clinical data in order to render an impression or conclusion set forth in a formal written report composed and signed by the radiologist.

**Interventional procedures** – Minimally invasive medical imaging guidance methods used to gain access to vessels and organs to diagnose and/or treat certain conditions percutaneously that might otherwise require surgery.

**Licensed independent practitioner** – An individual permitted by law to provide care and services, without direction or supervision, within the scope of the individual's license and consistent with individually granted privileges (e.g., physician, nurse practitioner, physician assistant).

**Medical Dosimetrist** – An individual who has education and knowledge in treatment planning and who, under the supervision of a radiation physicist and/or radiation oncologist, is capable of performing dose calculations and of assisting in calibration and verification of dose distribution within the patient.

**Medical Physicist** – An individual who is competent to practice independently in the safe use of x-rays, gamma rays, electron and other charged particle beams, neutrons, radionuclides, sealed radionuclide sources, ultrasonic radiation, radiofrequency radiation and magnetic fields for both diagnostic and therapeutic purposes. An individual will be considered competent to practice in the field of Medical Physics if he or she is certified by the appropriate recognized certification organization.

**Medication** – Any chemical substance intended for use in the medical diagnosis, cure, treatment or prevention of disease.

**Molecular imaging** – A biomedical discipline enabling the visualization, characterization, and quantification of biologic processes taking place at the cellular and subcellular levels within intact living subjects.

**Monitor units (MU)** – Unit of output measure used for linear accelerators. Accelerators are calibrated so that 1MU delivers 1cGy for a standard, reference field size at a standard reference depth at a standard source to calibration point.

**Normal tissue tolerance** – Radiation tolerance levels of healthy organs near or within the radiation treatment fields.

**Pathophysiology** – The study of how normal physiological processes are altered by disease.

**Personal Radiation Monitoring Devices** – Devices designed to be worn or carried by an individual for the purpose of measuring the dose of radiation received.

**Physics Survey** – Performing equipment testing, evaluating the testing results and completing a formal written report of same. The written survey report, validated by a medical physicist, contains sufficient information to document that each test was conducted according to local, state or federal requirements and includes assessment of corrective actions and recommendations for improvements.

**Portal images** – Images taken to demonstrate radiographically that the treatment field, as externally set on the patient, adequately encompasses the desired treatment volume and at the same time avoids adjacent critical structures.

**Post Processing** – Computerized processing of data sets after acquisition to create a diagnostic image.

**Precision** – Ability of the bone mineral densitometry system to reproduce the same results in repeat measurement of the same object.

**Protocol** – The plan for carrying out a scientific study or a patient's treatment regimen.

**Qualified supervisor** (limited x-ray machine operator) – Individual who is educationally prepared, clinically competent, and credentialed in the medical imaging and radiation therapy sciences who provides clinical supervision to another individual.

**Quality assurance** – Activities and programs designed to achieve a desired degree or grade of care in a defined medical, nursing or health care setting or program.

**Quality control (QC)** – The routine performance of techniques used in monitoring or testing and maintenance of components of medical imaging and radiation therapy equipment. This includes interpretation of data regarding equipment function and confirmation that corrective actions are taken.

**Radiation Oncologist** – A physician who specializes in using radiation to treat cancer.

**Radiation protection** – Prophylaxis against injury from ionizing radiation. The only effective preventive measures are shielding the operator, handlers and patients from the radiation source; maintaining appropriate distance from the source; and limiting the time and amount of exposure.

**Radiobiology** – The study of the effects of radiation on living organisms.

**Radiography** – The process of obtaining an image for diagnostic examination using x-rays.

**Repeat Analysis** – A systematic approach to critically investigate images or procedures that did not meet established standards. The general purpose of repeat analysis is to determine why images or procedures did not meet established standards, implement corrective action and avoid the same outcome(s) in the future.

**Sentinel Event** – An unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase “or the risk thereof” includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.

**Setup** – Arrangement of treatment parameters used in preparation for delivering radiation therapy; includes patient positioning data, field alignment information and equipment configurations.

**Simulation** – A process using imaging technologies to plan radiation therapy so that the target area is precisely located and marked; the mockup procedure of a patient treatment with medical imaging documentation of the treatment portals.

**Static** – Any radiographic image that is fixed or frozen in time.

**Timeout** –Preprocedural pause to conduct a final assessment that the correct patient, site and procedure are identified.

**Tolerance levels (doses)** – The maximum radiation dose that may be delivered to a given biological tissue at a specified dose rate and throughout a specified volume without producing an unacceptable change in the tissue.

**Treatment calculations** – See Dosimetric calculations.

**Treatment field (portal)** - Volume [of tissue] exposed to radiation from a single radiation beam.

**Treatment planning** – The process by which dose delivery is optimized for a given patient and clinical situation. It encompasses procedures involved in planning a course of radiation treatment; includes simulation through completion of the treatment summary.

**Treatment record** – Documents the delivery of treatments, recording fractional and cumulative doses, machine settings, verification imaging; and the ordering and implementation of prescribed changes.

**T-score** – Number of standard deviations the individual’s bone mineral density is from the average bone mineral density for sex-matched young normal peak bone mass.

**Venipuncture** – The transcutaneous puncture of a vein by a sharp rigid stylet or cannula carrying a flexible plastic catheter or by a steel needle attached to a syringe or catheter. It is done to withdraw a specimen of blood, perform a phlebotomy, instill a medication, start an IV infusion or inject a radiopaque substance for radiologic examination of a part or system of the body.

**Z-score** – Number of standard deviations the individual's bone mineral density is from the average bone mineral density for sex and age-matched reference group.

*Main Motion C-13.20*

**Insert definition for practitioner in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements, Definitions section.**

The Practice Standards Council moves to insert the following definition in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements, Definitions section:

Practitioner: A medical imaging or radiation therapy professional as described in the ASRT Practice Standards for Medical Imaging and Radiation Therapy.

*Main Motion C-13.21*

**Revise Common Language in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements, Determining Scope of Practice section.**

The Practice Standards Council moves to revise common language in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements, Determining Scope of Practice section, paragraph one by inserting “(if applicable within the jurisdiction in which he/she is employed)” after licensed and before educationally prepared.

*Main Motion C-13.22*

**Nuclear Medicine Chapter Proposals to Proposed Practice Standards**

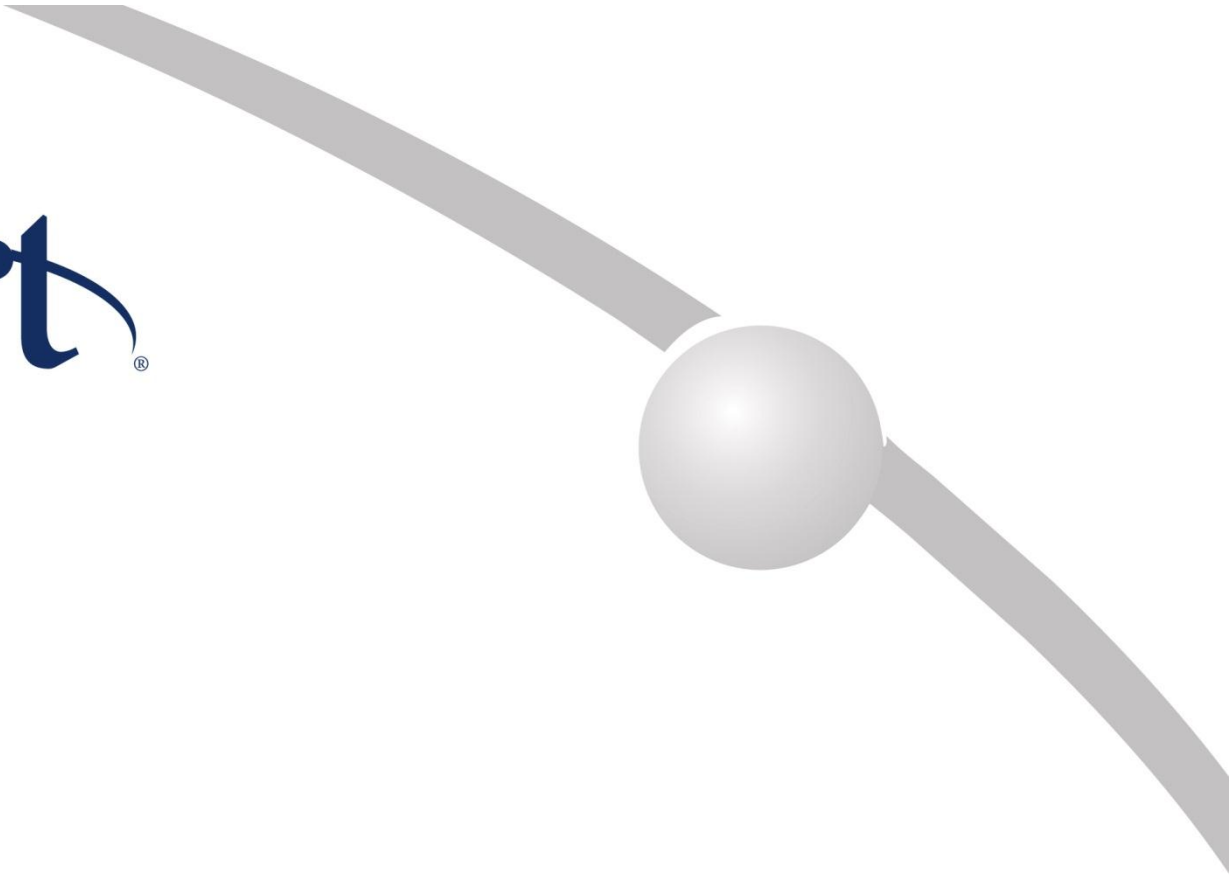
I move to delete the “strike out” of the following, “The Joint Review Committee on Educational Programs in Nuclear Medicine Technologist is the accrediting agency for nuclear medicine programs recognized by the U.S. Department of Education” as referenced by NM Line 37.

*Main Motion C-13.23*

**Replace all instances of the term “practitioner” in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements with the phrase “Medical Imaging and Radiation Therapy Professional”.**

The Commission moves to replace all instances of the term “practitioner” in Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists, Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector, Medication Injections by Radiologic Technologists, Medication Injection through Existing Vascular Access and Placement of Personal Radiation Monitoring Devices Advisory Opinion Statements with the following phrase:

Medical Imaging and Radiation Therapy Professional

A large, light gray decorative graphic is positioned in the upper right quadrant of the page. It consists of a thick, diagonal line that starts from the top left and extends towards the bottom right. A large, light gray sphere is centered on this line, partially overlapping it. The sphere has a subtle gradient and a highlight on its top surface, giving it a three-dimensional appearance.

# The Practice Standards for Medical Imaging and Radiation Therapy

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## Advisory Opinion Statement

### **Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists**

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## **Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists**

Communication of clinical and imaging observations and procedure details by the radiologist assistant to the supervising radiologist is an integral part of radiologist assistant practice. Without clear, consistent, appropriate and ascribed communication between members of the radiology team, there is a possibility of inadequate patient care, incomplete reports and diminished departmental productivity. Therefore, after reviewing literature, curriculum, position statements, scopes of practice, different laws, federal and state regulations and inquiries received by the American Society of Radiologic Technologists, the ASRT is issuing the following advisory opinion statement.

### **Accountability and Responsibility of Medical Imaging and Radiation Therapy Professionals**

The profession holds medical imaging and radiation therapy professionals individually 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, skill and 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**

Educationally prepared: The successful completion of didactic and clinical education necessary to perform a procedure safely.

Clinically competent: The ability to actually perform a procedure in a clinical setting through the completion of clinical education and documented through an assessment by a qualified instructor<sup>1</sup>.

### **Evidentiary Documentation:**

#### *Current Literature*

## **Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists**

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<sup>1</sup> American Society of Radiologic Technologists, "Practice Standards for Medical Imaging and Radiation Therapy: Glossary" Effective June 27, 2010



*A white paper developed by the American Society of Radiologic Technologists, American Registry of Radiologic Technologists, American College of Radiology and Society for Radiology Physician Extenders. February 2011.*

(Quality of evidence: High)

### Curriculum

The ASRT Radiologist Assistant Curriculum<sup>2</sup>

### **Report of Findings and Validation of Clinical Practice** (Pages 62-64)

#### **Description**

Content introduces guidelines for reporting initial observations made by the radiologist assistant during radiology procedures and image assessments. The radiologist assistant's role focuses on the systematic analysis of clinical practice — the diagnosis and treatment, resources, evidence-based decision making, procedures and resulting outcomes, including the patient's quality of life.

#### **Objectives**

1. Provide initial observations to the radiologist based on practice guidelines.
2. Identify the required legal components of a report of findings following diagnostic testing.
3. Establish and evaluate the benchmarks as they apply to diagnostic testing.
4. Explain the rationale for performing clinical audits.
5. Identify audit schemes applied to the clinical setting.
6. Identify measurement criteria and instruments employed during a clinical audit.
7. Describe how sensitivity and specificity measurements apply to diagnostic testing.
8. Distinguish between positive and negative predictive values when evaluating the results of diagnostic testing.
9. Discuss the importance of sampling and biases on the internal and external validity of audits of diagnostic accuracy.

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<sup>2</sup> American Society of Radiologic Technologists, "Radiologist Assistant Curriculum" ©Copyright 2011

## **Content**

### **I. Clinical Reporting**

- A. Legal considerations and requirements
- B. Composing, recording and archiving a report of initial observations
  - 1. Demographics
  - 2. Patient name and identification source
  - 3. Name of referring physician
  - 4. Name or type of examination
  - 5. Date of the examination
  - 6. Time of the examination
  - 7. Date of report of initial observations
  - 8. Body of report
    - a. Procedures and materials
      - 1) Contrast media
      - 2) Medications
      - 3) Catheters and devices used
      - 4) Any patient reaction or complication
    - b. Observation details
    - c. Potential limitations
    - d. Clinical issues
    - e. Comparative data (i.e., previous examinations or reports)
    - f. Observation summary

### **II. Evaluation of Diagnostic Accuracy**

- A. Benchmarks
- B. Sensitivity and specificity
- C. Predictive values
- D. Prior probability
- E. Bias

### **III. Clinical Audit**

- A. Rationale
- B. Audit schemes
  - 1. External quality assessment
  - 2. Internal quality assessment
  - 3. Accreditation
  - 4. Clinical governance (i.e., credentialing)
- C. Audit categories
  - 1. Access
  - 2. Process
  - 3. Output
  - 4. Outcome
  - 5. Use of resources
- D. Measurement criteria and instruments (i.e., ACR Appropriateness Criteria)

(Quality of evidence: High)

Certification Agency Content Specifications

The American Registry of Radiologic Technologists,  
Registered Radiologist Assistant Entry-Level Clinical Activities<sup>3</sup>.

The *ARRT Registered Radiologist Assistant Entry-Level Clinical Activities* states that radiologist assistants may “Review imaging procedures, make initial observations, and communicate observations **ONLY** (*emphasis added*) to the radiologist, record previously communicated initial observations of imaging procedures according to approved protocols and communicate the radiologist’s report to appropriate health care providers consistent with ACR Practice Guideline for Communicating Diagnostic Imaging Findings (*Revised 2005-Res.11 or its successor document*).”

(Quality of evidence: High)

ASRT Position Statements (June 2010)

**Evaluating Medical Images for Technical Adequacy**

It is the position of the American Society of Radiologic Technologists (ASRT) that the technical adequacy of medical images produced by a registered or licensed radiologic technologist only be evaluated by a registered radiologic technologist within their scope of practice.

Adopted, Resolution 05-3.03, 2006  
Amended, Main Motion C-09.54, 2009

(Quality of evidence: Low)

ASRT Practice Standards for Medical Imaging and Radiation Therapy,  
Radiologist Assistant Practice Standards (2010)

According to the *Radiologist Assistant Scope of Practice (Page 5)*:

“Postprocedural responsibilities include, but are not limited to, evaluating images for completeness and diagnostic quality, reporting initial observations to the delegating radiologist, providing follow-up patient evaluation and communicating the radiologist’s report to the appropriate health care providers. The radiologist assistant does not provide an image interpretation as defined by the American College of Radiology (ACR).”<sup>4</sup>

Specific standards for documentation exist in Standard Eight of the *2010 Radiologist Assistant Clinical Performance Standards* and Standard Five of the *2010 Radiologist Assistant Professional Performance Standards*.

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<sup>3</sup> American Registry of Radiologic Technologists, “Registered Radiologist Assistant Entry-Level Clinical Activities” Effective January 2011

<sup>4</sup> American Society of Radiologic Technologists, “Practice Standards for Medical Imaging and Radiation Therapy: Radiologist Assistant Practice Standards” Effective June 27, 2010

## **Radiologist Assistant Clinical Performance Standards<sup>5</sup>**

### **Standard Seven – Outcomes Measurement (Page 14)**

The radiologist assistant reviews and evaluates the outcome of the procedure.

*Specific Criteria:*

The radiologist assistant:

1. Evaluates images for completeness and diagnostic quality, and recommends additional images.
2. Reports initial observations to the delegating radiologist.
3. Performs follow-up patient evaluation and communicates findings to the delegating radiologist.

### **Standard Eight – Documentation (Page 15)**

The radiologist assistant documents information about patient care, the procedure and the final outcome.

*Specific Criteria:*

The radiologist assistant:

3. Reports the initial observations from the examination to the delegating radiologist.
4. Communicates the delegating radiologist's report to the appropriate health care provider consistent with the American College of Radiology Practice Guidelines for Communication of Diagnostic Imaging Findings.

## **Radiologist Assistant Quality Performance Standards (Page 23)**

### **Standard Eight – Documentation**

The radiologist assistant documents quality assurance activities and results.

*General Criteria:*

The radiologist assistant:

1. Maintains documentation of quality assurance activities, procedures and results in accordance with established guidelines.
2. Provides timely, accurate and comprehensive documentation.
3. Provides documentation that adheres to protocol, policy and procedures.

## **Radiologist Assistant Professional Performance Standards (Page 28)**

### **Standard Five – Ethics**

The radiologist assistant adheres to the profession's accepted ethical standards.

*Specific Criteria:*

The radiologist assistant:

2. Determines accuracy in all patient data including coding, billing and medical records.
3. Communicates with radiologist prior to providing final diagnosis to other health care providers.

(Quality of evidence: High)

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<sup>5</sup> American Society of Radiologic Technologists, "Practice Standards for Medical Imaging and Radiation Therapy: Radiologist Assistant Practice Standards" Effective June 27, 2010

Federal and State Statute Reference(s)

Not Applicable

(Quality of evidence: not applicable)

Other

(Quality of evidence: not applicable)

**Advisory Opinion**

It is the opinion of the American Society of Radiologic Technologists that:

Methods of Communication and Documentation

To create a safe and productive radiology environment, communication between the radiologist assistant and supervising radiologist must be free-flowing, consistent and relevant to the patient examination or procedure. This communication can take many forms, including verbal, written and electronic communication. These communications may be included and taken into consideration by the radiologist in creating a final report. However, initial clinical and imaging observations and procedure details communicated from the radiologist assistant to the radiologist are only intended for the radiologist's use and do not substitute for the final report created by the radiologist. These communications should be considered and documented as "initial clinical and imaging observations or procedure details."

The Role of the Radiologist Assistant in Creation of the Final Report

While assisting radiologists in the performance of imaging procedures or during the performance of procedures under radiologist supervision, the radiologist assistant must be able to communicate and document procedure notes, observations, patient responses and other type of information relevant to the radiologist's interpretation and creation of the final report. Radiologist assistants do not independently "report findings" or "interpret" by dictation or by any other means; and to avoid any confusion, these terms should not be used to refer to the activities of the radiologist assistant. However radiologist assistants may add to the patient record (following the policies and procedures of the facility) in a manner similar to any other dependent non-physician practitioner. Radiologist assistants who are authorized to communicate initial observations to the supervising radiologist using a voice recognition dictation system or other electronic means must adhere to institutional protocols ensuring that initial observations can be viewed or accessed only by the supervising radiologist. Initial clinical or imaging observations or procedure details created by the radiologist assistant resulting from the radiologist assistant's involvement in the performance of the procedure that are included in the final report should be carefully reviewed by the supervising radiologist and should be incorporated at the supervising radiologist's discretion.

(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. With proper education and proven competence the communication of clinical and imaging observations and procedure details by radiologist assistants to supervising radiologists provides quality patient services in a safe environment.

## **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 - 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 wish to 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.

Approved: June 19, 2011  
Amended, Main Motion, C-13.21 & C13.23, 2013  
ASRT House of Delegates



# The Practice Standards for Medical Imaging and Radiation Therapy

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## Advisory Opinion Statement

### **Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector**

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## **Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector**

The ASRT House of Delegates has a position statement regarding the ability of medical imaging and radiation therapy professionals to inject medication through a peripherally inserted central catheter or port. After research of evidentiary documentation such as current literature, curricula, position statements, scopes of practice, laws and federal and state regulations and inquiries received by the American Society of Radiologic Technologists Office of Practice Standards, the ASRT issued opinions as contained herein.

### **Accountability and Responsibility of Medical Imaging and Radiation Therapy Professionals**

The profession holds individuals 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 individual's performance should be consistent with state and federal laws, established standards of practice, facility policies and procedures and be evidence based.

### **Definitions**

Educationally prepared: The successful completion of didactic and clinical education necessary to perform a procedure safely.

Clinically competent: The ability to actually perform a procedure in a clinical setting through the completion of clinical education and documented through an assessment by a qualified individual.

### **Evidentiary Documentation**

#### **Current Literature**

Not applicable.

(Quality of evidence: not applicable)

#### **Curricula**

The ASRT curricula for all practice areas were reviewed.

Magnetic Resonance Imaging Curriculum,

Section IX, Safety in MR Contrast Administration

C.2.a-c identified the use of an existing line for administration of contrast media.

Computed Tomography/Positron Emission Tomography Curriculum

Section I Patient Care

A.3-4 identified the use of an existing line for administration of contrast media.

(Quality of evidence: High)



Certification Agency Content Specifications

The American Registry of Radiologic Technologists content specifications.

Computed Tomography Section A, 3, b. Cardiac Interventional/Vascular Interventional Section A, 3, a-c.

(Quality of evidence: High)

ASRT Position Statements

2009 Peripherally Inserted Central Catheter (PICC) Lines or Ports for Power Injectors. It is the position of the American Society of Radiologic Technologists (ASRT) that the use of power injectors with peripherally inserted central catheter (PICC) lines or ports is within the scope of practice for radiologic technologists with the appropriate clinical and didactic education when a Food and Drug Administration (FDA) approved PICC line catheter or port specifically for power injectors is used, when manufacturer guidelines regarding infusion rate and pressure are followed and where federal or state law and/or institutional policy permits.

Adopted, Resolution 05-3.05, 2005  
Amended, Resolution C-07.23, 2007  
Amended, Main Motion, C-09.59, 2009

(Quality of Evidence: Low)

Scopes of Practice and Practice Standards Reference

2010 ASRT Standards of Practice for Medical Imaging and Radiation Therapy.

All modality specific scopes of practice except radiologist assistants and limited x-ray machine operator.

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

Magnetic Resonance Imaging Scope of Practice

5. Selecting and operating the magnetic resonance system, surface coils, physiologic gating devices and associated equipment to achieve desired results.

Radiography Scope of Practice

5. Selecting and operating imaging equipment and/or associated accessories to successfully perform procedures.

Cardiovascular interventional Technology, Cardiac interventional Technology and Vascular interventional Technology Clinical Performance Standards,

Clinical Performance Standards, Standard Four - Performance, *General Criteria*

7. Uses accessory equipment.

Clinical Performance Standards, Standard Four - Performance, *Specific Criteria*

2. Prepares, sets and implements appropriate technical parameters such as generators, power injectors, etc.

(Quality of evidence: High)

Federal and State Statute Reference(s)

Not Applicable.

(Quality of evidence: not applicable)

Other

(Quality of evidence: not applicable)

**Advisory Opinion**

It is the opinion of the American Society of Radiologic Technologists that:

1. Based upon the curricula set forth by the ASRT, the ASRT House of Delegates position statement and the ASRT Practice Standards for Medical Imaging and Radiation Therapy it is within the scope of practice for radiologic technologists to use a power injector for administration of medication when a Food and Drug Administration approved PICC line catheter or port specifically for power injectors is used, when manufacturer guidelines regarding infusion rate and pressure are followed and where federal or state law and/or institutional policy permits.

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. With proper education and proven competence the use of power injectors with PICC lines or ports provides quality patient services in a safe environment.

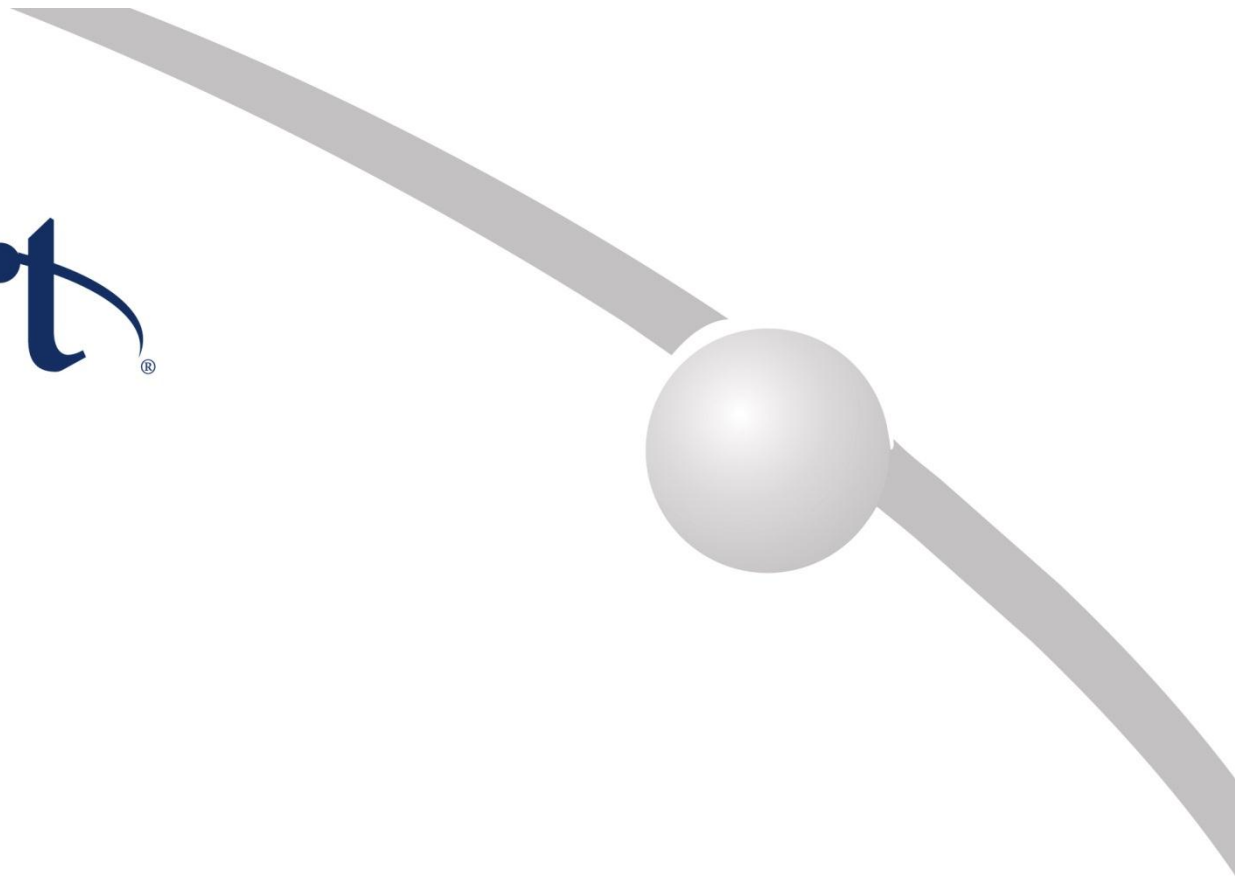
**Determining Scope of Practice**

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 - 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 individuals who wish to engage in safe practice. Federal and state laws, accreditation standards necessary to participate in government programs and lawful institutional policies and procedures supersede these standards. The individual must be educationally prepared and clinically competent as a prerequisite to professional practice.

Approved: June 19, 2011

Amended, Main Motion, C-13.21 & C13.23, 2013  
ASRT House of Delegates



# The Practice Standards for Medical Imaging and Radiation Therapy

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Advisory Opinion Statement

**Medication Injections by Radiologic Technologists**

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## **Medication Injections by Radiologic Technologists**

After 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 opinions contained herein.

### **Accountability and Responsibility of Medical Imaging and Radiation Therapy Professionals**

The profession holds medical imaging and radiation therapy professionals individually 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 which 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.

**Clinically competent:** The medical imaging and radiation therapy professional's ability to perform a procedure in a clinical setting through the completion of clinical education and documented through an assessment by a qualified instructor.

**Educationally prepared:** Successful completion of didactic and clinical education necessary to perform a procedure safely.

**Licensed independent practitioner:** An individual permitted by law to provide care and services without direction or supervision within the scope of the individual's license and consistent with individually granted privileges (e.g., physician, nurse practitioner, physician assistant).

**Medication:** Any chemical substance intended for use in the medical diagnosis, cure, treatment or prevention of disease. Contrast media and radiopharmaceuticals are medications.

### **Evidentiary Documentation**

#### **Current Literature**

American College of Radiology. *ACR Accreditation Facility Toolkit. Policy and Procedure Checklist.* [www.acr.org/accreditation/Toolkit-Practice-Sites.aspx](http://www.acr.org/accreditation/Toolkit-Practice-Sites.aspx).

American College of Radiology. *ACR Manual on Contrast Media, Version 7.* [www.acr.org/SecondaryMainMenuCategories/quality\\_safety/contrast\\_manual/FullManual.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual/FullManual.aspx). 2010.

American College of Radiology. *ACR Practice Guideline for Performing and Interpreting Magnetic Resonance Imaging*.  
[http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/dx/mri\\_performing\\_interpreting.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/dx/mri_performing_interpreting.aspx). 2011.

American College of Radiology. *ACR Practice Guideline for the Performance of Excretory Urography*.  
[http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/dx/genit/excretory\\_urography.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/dx/genit/excretory_urography.aspx). 2009.

American College of Radiology. *ACR Practice Guidelines for the Use of Intravascular Contrast Media*.  
[www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/dx/iv\\_contrast.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/dx/iv_contrast.aspx). 2007.

American College of Radiology. *ACR-SNM Technical Standard for Diagnostic Procedures Using Radiopharmaceuticals*.  
[www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/nuc\\_med/radiopharmaceuticals.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/nuc_med/radiopharmaceuticals.aspx). 2011.

American Hospital Association. Transmittal 128. *CMS Manual System: Pub 100-02 Medicare Benefit Policy*. [www.aha.org/content/00-10/R128BP.pdf](http://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.

2009 ASRT Cardiovascular Interventional and Vascular Interventional Curriculum Pharmacology and Drug Administration Objectives, p. 70, identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medication and the appropriate delivery of patient care during medication administration.

2008 ASRT Computed Tomography Curriculum Pharmacology and Drug Administration Objectives, p.50, identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2008 ASRT Mammography Curriculum

Pharmacology and Drug Administration Objectives, p.56, identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2008 ASRT Magnetic Resonance Curriculum

Pharmacology and Drug Administration, p. 79,

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

2009 ASRT Radiation Therapy Professional Curriculum

Radiation Therapy Patient Care, p.86,

Section VIII identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2007 ASRT Radiography Curriculum,

Pharmacology and Drug Administration, p. 49,

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

2011 ASRT Radiologist Assistant Curriculum

Pharmacology and Clinical Decision-Making in Radiology, 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-VI 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

2008 Curriculum Guide for Educational Programs in Nuclear Medicine 4th Edition  
Chapter 1 Patient Care, p. 9,  
Sections VII-VIII identified administration routes and phlebotomy.  
Chapter 12 Nuclear Pharmacy and Pharmacology, p. 80,  
Sections I-XV identified theory and practice of radiopharmacy,  
nonradioactive interventional drugs and contrast media, routes of administration,  
biodistribution mechanisms, interfering agents, contraindications and adverse  
effects.

(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 III, a-d.  
Nuclear Medicine Category B, Sections 2-3.  
Radiation Therapy Category C, Section 1, Category D, 1-3, Category E, Section 5.  
Radiography Category E, Sections V - VI.  
Registered Radiologist Assistant Category B, Sections 1-4.  
Vascular-Interventional Radiography Category B, Section 4, a-d. Section 5, a-e. Section 7  
a-c.

Cardiovascular Credentialing International (CCI)

Registered Cardiovascular Invasive Specialist (RCIS) exam overview task list:  
Section B, 5, a-d. Sections 10, 14.

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.

(Quality of evidence: High)

Scopes of Practice and Practice Standards Reference

2011 ASRT Practice Standards for Medical Imaging and Radiation Therapy.

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

Identifying, preparing and/or administering medications as prescribed by a licensed independent  
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 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 a radiologic technologist to perform the parenteral injection of contrast media and other medications.
2. The parenteral injection of contrast media and other medications by radiologic technologists shall be performed only when a licensed independent practitioner is immediately available to ensure proper diagnoses 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 injection of contrast media and other medications by radiologic technologists provides quality patient services in a safe environment when a licensed independent practitioner is immediately available to ensure proper diagnoses and treatment for 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 - 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. \_

Approved: July 1, 2012

Amended, Main Motion, C-13.21 & C13.23, 2013

ASRT House of Delegates



# The Practice Standards for Medical Imaging and Radiation Therapy

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## Advisory Opinion Statement

### Medication Injections Through Existing Vascular Access

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## **Medication Injection Through Existing Vascular Access**

After 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 opinions contained herein.

### **Accountability and Responsibility of Medical Imaging and Radiation Therapy Professionals**

The profession holds medical imaging and radiation therapy professionals individually 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 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**

**Clinically competent:** The medical imaging and radiation therapy professional's ability to perform a procedure in a clinical setting through the completion of clinical education and documented through an assessment by a qualified instructor.

**Educationally prepared:** Successful completion of didactic and clinical education necessary to safely perform a procedure.

**Existing vascular access:** Peripheral or central vascular implanted devices or external access lines that include, but are not limited to, peripherally inserted central catheter lines, intravenous lines, central lines and ports.

**Medication:** Any chemical substance intended for use in the medical diagnosis, cure, treatment or prevention of disease. Contrast media and radiopharmaceuticals are medications.

### **Evidentiary Documentation**

#### **Current Literature**

American College of Radiology. *ACR Manual on Contrast Media, Version 7.*

[www.acr.org/SecondaryMainMenuCategories/quality\\_safety/contrast\\_manual/FullManual.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual/FullManual.aspx). 2010; 81:11-12.

American College of Radiology. *ACR Practice Guidelines for Performing and Interpreting Diagnostic CT.*

[www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/dx/ct\\_performing\\_interpreting.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/dx/ct_performing_interpreting.aspx). 2011.

American College of Radiology. *ACR Practice Guidelines for the Use of Intravascular Contrast Media*.

[www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/dx/iv\\_contrast.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/dx/iv_contrast.aspx).  
2007.

Rockwell D. A competency for central line use in radiology. *Journal of Radiology Nursing*. 2008; 27 (2): 84.

(Quality of Evidence: High)

### Curriculum

The ASRT curricula for all practice areas were reviewed.

2009 ASRT Cardiovascular Interventional and Vascular Interventional Curriculum  
Pharmacology and Drug Administration Objectives, p. 70, identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medication and the appropriate delivery of patient care during medication administration including routes of drug administration.

2008 ASRT Computed Tomography Curriculum  
Pharmacology and Drug Administration Objectives, p.50, identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medication and the appropriate delivery of patient care during medication administration including routes of drug administration.

2008 ASRT Magnetic Resonance Imaging Curriculum  
MR Safety, p.73,  
Sections I-IX identified the basic principles of MR safety and patient management and recommended procedures and responsibilities including the use of an existing line for administration of contrast media.

Pharmacology and Drug Administration, p.79,  
Sections I-VII identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration including routes of drug administration.

2008 ASRT Mammography Curriculum  
Pharmacology and Drug Administration Objectives, p.56, identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medication and the appropriate delivery of patient care during medication administration including routes of drug administration.

2009 ASRT Radiation Therapy Professional Curriculum

Radiation Therapy Patient Care, p.86,  
Section VIII Medications and Their Administration identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications and the appropriate delivery of patient care during medication administration.

2007 ASRT Radiography Curriculum

Pharmacology and Drug Administration, p.49,  
Sections I-VIII identified basic concepts of pharmacology, theory and practice of basic techniques of venipuncture and administration of contrast agents and/or intravenous medications including routes of drug administration.

2011 ASRT Radiologist Assistant Curriculum

Pharmacology and Clinical Decision-Making in Radiology, 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 including routes of drug 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

2008 Curriculum Guide for Educational Programs in Nuclear Medicine 4th Edition

Chapter 1, Patient Care, p. 9,  
Sections VII-VIII addressed administration routes and phlebotomy.  
Chapter 12 Nuclear Pharmacy and Pharmacology, p. 80,  
Sections I-XV identified theory and practice of radiopharmacy, nonradioactive interventional drugs and contrast media, routes of administration, biodistribution mechanisms, interfering agents, contraindications and adverse effects.

(Quality of evidence: High)

Certification Agency Content Specifications

The American Registry of Radiologic Technologists (ARRT) content specifications:

Cardiac-Interventional Radiography Category B, Section 4, a-c. Section 6, a-c.  
Computed Tomography Category A, Section 3, a-g.  
Magnetic Resonance Imaging Category A, Section III, D.  
Nuclear Medicine Category B, Section 3, C.  
Radiation Therapy Category E, Section 4, B.

Radiography Category B, Section 4, a-d. Section 5, a-e.  
Radiography Category E, Section VI, F.  
Registered Radiologist Assistant Category B, Section 1, f. Vascular-Interventional

Cardiovascular Credentialing International (CCI):

Registered Cardiovascular Invasive Specialist (RCIS) exam overview task list:  
Section B 5, 14.

Nuclear Medicine Technology Certification Board (NMTCB) components of preparedness:  
Group III, Task #34, Content base 2, c, Task #35, Content base 3, a-e.  
Group IV, Task #42, Content base 3, b, Content base 4, d.

(Quality of evidence: High)

Scopes of Practice and Practice Standards Reference

2011 ASRT Practice Standards for Medical Imaging and Radiation Therapy.

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

Performing venipuncture as prescribed by a licensed independent practitioner.

Starting and maintaining intravenous (IV) access as prescribed by a licensed independent practitioner.

Identifying, preparing and/or administering medications as prescribed by a licensed independent 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, the curricula set forth by the ASRT, Society of Nuclear Medicine and the National Educational Curriculum for Sonography, certification examination specifications by the ARRT, NMTCB and CCI, and recommendations by the American College of Radiology and where federal or state law and/or institutional policy permits it is within the scope of practice for radiologic technologists to access and administer medications through existing vascular access.

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, accessing and administering medications through existing vascular access provides quality patient services in a safe environment.

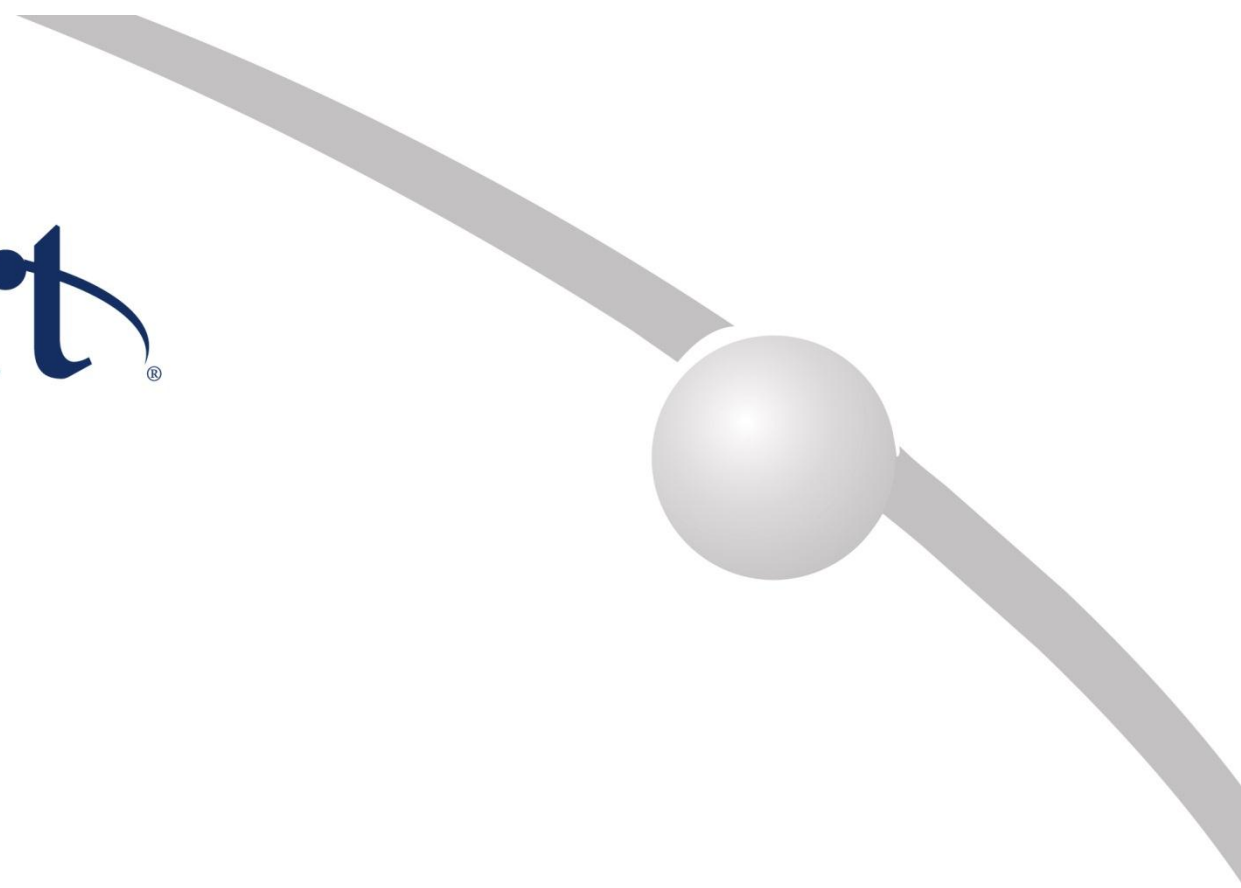
### **Determining Scope of Practice**

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 - 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.\_

Approved: July 1, 2012  
Amended, Main Motion, C-13.21 & C13.23, 2013  
ASRT House of Delegates





# The Practice Standards for Medical Imaging and Radiation Therapy

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## Advisory Opinion Statement

### Placement of Personal Radiation Monitoring Devices

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## **Placement of Personal Radiation Monitoring Devices**

After research 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 opinions contained herein.

### **Accountability and Responsibility of Medical Imaging and Radiation Therapy Professionals**

The profession holds medical imaging and radiation therapy professionals individually 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 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**

Personal radiation monitoring device: Devices designed to be worn or carried by an individual for the purpose of measuring the dose of radiation received (e.g., film badges, pocket chambers, pocket dosimeters, film rings, etc.).

### **Evidentiary Documentation**

#### **Current Literature**

Bushong S. Occupational radiation dose management: Occupational radiation monitoring. In: *Radiologic Science for Technologists: Physics, Biology, and Protection* 9th Ed. Mosby. 2008:622.

Statkiewicz-Sherer M, Visconti P, Ritenour, E. Radiation monitoring: Placement of personnel dosimeter. In: *Radiation Protection in Medical Radiography*. Mosby. 2006:250.

U.S. Department of Labor. Occupational Safety and Health Standards web page. Occupational Safety & Health Administration Web site.

[www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10098](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10098). Standard Number: 1910.1096(d)(3)(i). Accessed October 10, 2011.

(Quality of Evidence: High)

#### **Curriculum**

The ASRT curricula for all practice areas were reviewed.

2009 ASRT Bone Densitometry Curriculum

Radiation Safety and Protection, p. 43,  
Section II, B, 3 identified the knowledge base for how to adapt general radiation safety and protection principles and practices to bone densitometry techniques using ionizing radiation with DXA, including personnel monitoring.

2009 ASRT Limited X-ray Machine Operator curriculum

Radiation Protection and Radiobiology, p. 63,  
Section IV, A-E identified an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public, a historical evolution of standards for personnel monitoring, the requirements, types and methods of personnel monitoring equipment, record keeping and dose limits.

2004 ASRT PET-CT curriculum

Content Specifications for Basic Nuclear Medicine and PET for Dual Modality Imaging, p. 3, Section I, A identified an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public, including personnel monitoring.

2009 ASRT Radiation Therapy curriculum

Radiation Protection, p. 81,  
Section IV, A-E identified an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public, the requirements, types and methods of personnel monitoring equipment, record keeping and dose limits.

2007 ASRT Radiography Curriculum

Radiation Protection, p. 61,  
Section IV, A-F, identified an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public, a historical evolution of standards for personnel monitoring, the requirements, types and methods of personnel monitoring equipment, record keeping and dose limits.

2011 ASRT Radiologist Assistant curriculum

Radiation Safety, Radiobiology, and Health Physics, p.45,  
Section III, A-F identified content designed to expand on prior knowledge to enhance an understanding of protection of individual and population groups against the harmful effects of ionizing radiation and practical techniques and QA/QC procedures for reducing patient and operator risk of exposure to ionizing radiation including personnel monitoring.

(Quality of Evidence: High)

Certification Agency Content Specifications

The American Registry of Radiologic Technologists (ARRT) content specifications:

Nuclear Medicine Category A, Section 1, B, 4, b.

Radiation Therapy Category A, Section 2, B, 1-2.

Radiography Category A, Section IV, B, 2.

Registered Radiologist Assistant Category E, Section 1, b, 3.

(Quality of Evidence: High)

Federal and State Statute Reference(s)

10 CFR Part 19.12 Instruction to Workers

10 CFR Part 20.1208 Dose Equivalent to an Embryo/Fetus

10 CFR Part 20.1502 Conditions Requiring Individual Monitoring of External and Internal Occupational Dose

NRC Regulatory Guide 8.34 Monitoring Criteria and Methods to Calculate Occupational Radiation Doses

NRC Regulatory Guide 8.36 Radiation Dose to the Embryo/Fetus

NRC Regulatory Guide 8.7 Instructions for Recording and Reporting Occupational Radiation Exposure Data

(Quality of Evidence: High)

Other

American Association of Physicists in Medicine (AAPM) Report 58 Appendix A: Radiation Safety and Quality Assurance Program

(Quality of Evidence: High)

**Advisory Opinion**

It is the opinion of the American Society of Radiologic Technologists that based upon current literature, the curricula set forth by the ASRT, ARRT content specs, regulatory requirements, AAPM recommendations and where federal or state law and/or institutional policy permits that:

1. Radiation workers wear a personal radiation monitoring device outside of protective apparel with the label facing the radiation source at the level of the thyroid to approximate the maximum dose to the head and neck.
2. In specific cases a whole-body monitor may be indicated. This monitor should be worn at the waist under a protective lead apron.
3. In some cases a ring badge may be indicated. This monitor should be worn on the dominant hand with the label facing the radiation source.

GRADE: Strong

**Rationale**  
**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 determination of proper use of personal monitoring devices ensures a safe environment in which to provide quality patient services.

### **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 - 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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