American Society of Radiologic Technologists

Twenty-sixth Session of the House of Delegates

Hyatt Regency
Albuquerque, N.M.
June 17-19, 2011

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Twenty-sixth Session of the ASRT House of Delegates

Hyatt Regency
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First Business Meeting

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Second Business Meeting

Twenty-sixth Annual Meeting of the ASRT House of Delegates

Hyatt Regency
Albuquerque, N.M.
June 17-19, 2011

First Business Meeting

I. Call to Order

Speaker of the House Donna Long called the 26th Annual Meeting of the ASRT House of Delegates to order at 2:47 p.m., Friday, June 17, 2011.

II. Opening Ceremony and Delegate Orientation

Speaker of the House Donna Long appointed Tami Briones, House of Delegates and Chapter Relations program manager, to take the minutes of the House meetings.

Following the Opening Ceremony and appropriate introductions, Speaker of the House Donna Long presented delegate orientation.

III. Credentials Report

Vice Speaker Sandra Hayden presented the Credentials Report. Out of a possible 170 delegates, 150 were credentialed as follows:

Credentialed Affiliate Delegates:	96
Credentialed Chapter Delegates:	54
Total Credentialed Delegates:	150

Action: Adopted by voice vote without objection. The Credentials Report established that a quorum was present.

IV. Adoption of House of Delegates' Standing Rules

Action: Adopted by a rising vote without objection.

V. Adoption of Agenda

Action: Adopted by a voice vote without objection.

VI. Memorial Resolution

Motion: Be it resolved, that the American Society of Radiologic Technologists expresses its sorrow over the passing of these members since our 2010 House of Delegates meeting in Albuquerque, N.M., 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.)

VII. Reports

A. ASRT Annual Report

President of the ASRT James Temme presented the annual report. The 2011 election results were provided to the House of Delegates.

B. ASRT Education and Research Foundation Annual Report

Chairman of the ASRT Education and Research Foundation Catherine Parsons provided a report on the ASRT Education and Research Foundation.

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

Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists.
The Practice Standards Council moves to adopt the Advisory Opinion Statement titled "Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists."

Motion: On behalf of the Practice Standards Council, Chairman Denise Orth moved to debate the motion "Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists."

Action: Adopted 111 – 34.

Lambda Nu Honor Society Recognition
I move that the ASRT recognize Lambda Nu as the National Honor Society for Medical Imaging and Radiation Therapy.

Motion: Anita Slechta (Education Chapter delegate) moved that the ASRT recognize Lambda Nu as the National Honor Society for Medical Imaging and Radiation Therapy.

Action: Lost 91 – 55.

IX. Nominations for Speaker and Vice Speaker

Speaker
Sandra Hayden

Vice Speaker
G. Tim Wescott

X. Adjournment

Following announcements, Speaker of the House Donna Long adjourned the first business meeting of the 2011 House of Delegates at 5:11 p.m., Friday, June 17, 2011.

Twenty-sixth Annual Meeting of the ASRT House of Delegates

Hyatt Regency
Albuquerque, N.M.
June 17-19, 2011

Second Business Meeting

I. Call to Order

Speaker of the House Donna Long called the second business meeting of the 26th Annual Meeting of the ASRT House of Delegates to order at 8 a.m., Sunday, June 19, 2011.

II. Credentials Report

Vice Speaker Sandra Hayden presented the Credentials Report. There was no change in the number of credentialed delegates (150).

III. Committee on Bylaws Report

Chairman William Brennan presented the Committee on Bylaws report. The Committee on Bylaws had no main motions assigned to it and had no proposed amendments.

IV. Commission Report and Consent Calendar

Action: Motions 2, 3, 13, 15, 28, 29, 34 and 35 were removed from the Consent Calendar. Following this action the remainder of the Consent Calendar, consisting of motions 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31, 32 and 33, was adopted by voice vote without objection.

Chairman Steven Herrmann 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:

Main Motion	Title	Action
C-11.01	Rescind the Practice Standards for Medical Imaging and Radiation Therapy Preface	Adopted on Consent Calendar.
C-11.02	Amend the Bone Densitometry Standards	Adopted as amended 143 – 7.
C-11.03	Amend the Cardiovascular-Interventional Technology Practice Standards	Adopted as amended 145 – 2.
C-11.04	Rescind the Cardiac-interventional Radiography Practice Standards	Adopted on Consent Calendar.
C-11.05	Rescind the Vascular-interventional Radiography Practice Standards	Adopted on Consent Calendar.
C-11.06	Amend the Computed Tomography Practice Standards	Adopted on Consent Calendar.
C-11.07	Amend the Limited X-ray Machine Operator Practice Standards	Adopted on Consent Calendar.

C-11.08	Amend the Magnetic Resonance Practice Standards	Adopted on Consent Calendar.
C-11.09	Amend the Mammography Practice Standards	Adopted on Consent Calendar.
C-11.10	Amend the Nuclear Medicine Practice Standards	Adopted on Consent Calendar.
C-11.11	Amend the Radiography Practice Standards	Adopted on Consent Calendar.
C-11.12	Amend the Radiologist Assistant Practice Standards	Adopted on Consent Calendar.
C-11.13	Amend the Radiation Therapy Practice Standards	Adopted as amended 144 – 5.
C-11.14	Amend the Sonography Practice Standards	Adopted on Consent Calendar.
C-11.15	Amend the Practice Standards Glossary	The Commission moved to divide the question and vote separately on the definition of "As low as reasonably achievable (ALARA)" and "Physicist (radiation physicist, medical radiation physicist)." Motion divided without objection.
C-11.15A	Adoption of the proposed Glossary with the exceptions of the definitions of "As low as reasonably achievable (ALARA)" and "Physicist (radiation physicist, medical radiation physicist)"	Adopted 148 – 1.
C-11.15B	Adoption of the definition of "As low as reasonably achievable (ALARA)"	Adopted as amended 142 – 5.
C-11.15C	Adoption of the definition of "Physicist (radiation physicist, medical radiation physicist)."	The Commission moved to refer Motion C-11.15C back to the Practice Standards Council. Adopted 146 – 4.
C-11.16	Rescind the Position Statement "Qualifications for Performing Bone Densitometry"	Adopted on Consent Calendar.
C-11.17	Rescind the Position Statement "Qualifications for Performing Cardiac-Interventional (CI), Cardiovascular-Interventional (CV) and Vascular-Interventional (VI) Radiography"	Adopted on Consent Calendar.
C-11.18	Rescind the Position Statement "Qualifications for Performing Computed Tomography (CT)"	Adopted on Consent Calendar.
C-11.19	Rescind the Position Statement "Qualifications for Performing Image-guided Procedures"	Adopted on Consent Calendar.
C-11.20	Rescind the Position Statement "Qualifications for Performing Magnetic Resonance (MR)"	Adopted on Consent Calendar.
C-11.21	Rescind the Position Statement "Qualifications for Performing Medical Radiography"	Adopted on Consent Calendar.
C-11.22	Rescind the Position Statement "Qualifications for Performing Nuclear Medicine"	Adopted on Consent Calendar.
C-11.23	Rescind the Position Statement "Qualifications for Performing Radiation Therapy"	Adopted on Consent Calendar.
C-11.24	Rescind the Position Statement "Qualifications for Performing Sonography"	Adopted on Consent Calendar.
C-11.25	Adopt the Advisory Opinion Statement titled "Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector"	Adopted on Consent Calendar.

C-11.26	Rescind the Position Statement "Peripherally Inserted Central Catheter (PICC) Lines or Ports for Power Injectors"	Adopted on Consent Calendar.
C-11.27	Rescind the Position Statement "Education of Personnel Performing Digital Radiography"	Adopted on Consent Calendar.
C-11.28	Rescind the Position Statement "Ensuring Radiation Exposures Are As Low As Reasonably Achievable"	Jason Young (Missouri affiliate delegate) moved that debate of Motion C-11.28 be postponed for consideration until after Motion C-11.35 is considered. Adopted 121 - 25). Following consideration of Motion C-11.35, the motion was Lost 21 - 128.
C-11.29	Rescind the Position Statement "Evaluating Medical Images for Technical Adequacy"	Lost 27 – 122.
C-11.30	Rescind the Position Statement "Peripherally Inserted Central Catheter (PICC) Placement and Removal"	Adopted on Consent Calendar.
C-11.31	Rescind the Position Statement "Removal of Devices for Invasive Radiologic Procedures"	Adopted on Consent Calendar.
C-11.32	Rescind the Position Statement "Use of Imaging Specialties in Radiation Therapy"	Adopted on Consent Calendar.
C-11.33	Rescind the Position Statement "Verbal and/or Telephone Orders"	Adopted on Consent Calendar.
C-11.34	Professional Programmatic Peer Review	Adopted as amended including title 139 – 10.
C-11.35	Continuing Education of Personnel in Area of Practice to Reduce Radiation Dose	Adopted as amended including title 113 – 35.
C-11.36	Adopt the Advisory Opinion Statement titled "Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists"	Adopted 149 – 0.

V. New Business

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

Reconsider
I move to reconsider the vote on the following motions adopted on the Consent Calendar: C-11.06, C-11.07, C-11.08, C-11.09, C-11.10, C-11.11, C-11.12, C-11.14.

Motion: Anita Slechta (Education Chapter delegate) moved to debate the motion "Reconsider."

Action: Lost 57 - 92.

B. Report of Election of Chapter Steering Committee Chairmen

Bone Densitometry
Chairman Lisa King
Vice Chairman Robbyn Scriven

Cardiovascular Interventional Technology
Chairman Steven Miles
Vice Chairman Roger Bogue

Computed Tomography
Chairman Jesse Pennington
Vice Chairman Larry "Max" Maxwell

Education
Chairman James Johnston
Vice Chairman Nina Kowalczyk

Magnetic Resonance
Chairman Christina Thomas
Vice Chairman Jonathan Mazal

Mammography
Chairman Stephanie Johnston
Vice Chairman Karen Otterberg

Management
Chairman Suzan Cazaux
Vice Chairman Denise Tabor

Medical Dosimetry
Chairman Stacey Anderson
Vice Chairman Leigh Kestranek

Military
Chairman Tim Soukup
Vice Chairman Shawn Stevenson

Nuclear Medicine
Chairman Mary St. Peter
Vice Chairman Mark Wallenmeyer

Quality Management
Chairman Nancy Johnson
Vice Chairman Linda Holden

Radiation Therapy
Chairman Kevin Rush
Vice Chairman Lynda Reynolds

Radiography
Chairman Tom King
Vice Chairman Gaylia Smith-Whetsel

Registered Radiologist Assistant
Chairman Tracy Ferrara
Vice Chairman Victoria Sanders

Sonography
Chairman Dale Collins
Vice Chairman Bettye Wilson

VI. Nominations for Speaker and Vice Speaker

Speaker
Sandra Hayden

Vice Speaker
G. Tim Wescott
Catherine Kukec

VII. Election of Speaker and Vice Speaker

Action: Sandra Hayden was elected as speaker by a voice vote without objection.

Action: G. Tim Wescott, 97.
Catherine Kukec, 52.

G. Tim Wescott was elected as vice speaker.

VIII. Courtesy Motions

A courtesy motion was brought by Ashley Smith (Indiana affiliate delegate) congratulating Speaker of the House Donna Thaler Long of Indiana for expediting the business of the House of Delegates and congratulating Donna on her election as president-elect.

Motion: Be it resolved that we give you a much-deserved standing ovation for your amazing dedication to the ASRT.

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

Without objection, the House of Delegates agreed to suspend the rules to allow students to bring a motion of courtesy thanking the ASRT for opportunity to attend the ASRT Student initiative program and the Annual Governance and House of Delegates meeting.

Motion: Resolved, the students would like to thank the leaders of the ASRT for giving us this opportunity.
Resolved, we would like to thank everyone who planned, contributed and mentored us throughout this meeting.
Resolved, we will return to our respective schools and commit to educate our fellow students about the leadership, teamwork and professionalism we have experienced as student members of the ASRT.
Resolved, that we pledge to carry this gift of experience forward, joining and becoming active in our state affiliate societies, with the eventual goal of joining your ranks as participants in the ASRT House of Delegates.

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

IX. Adjournment

Speaker of the House Donna Long adjourned the second meeting of the 26th Annual Meeting of the House of Delegates at 11:39 a.m., Sunday, June 19, 2011.

Approved:

Speaker
Chairman, Minutes Approval Committee
Donna Long

Vice Speaker
Sandra Hayden

Twenty-sixth Session of the ASRT House of Delegates
Motions Appendix

Hyatt Regency
Albuquerque, N.M.
June 17-19, 2011

Motion
Be it resolved, that the American Society of Radiologic Technologists expresses its sorrow over the passing of these members since our 2010 House of Delegates meeting in Albuquerque, N.M., and affirms our sorrow by rising for a moment of silence in memory of our departed colleagues.

American Society of Radiologic Technologists

2011 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:

Lise	Black	Morganton	North Carolina
Kimberly	Boyd	Mineral City	Ohio
Torri	Brady	Little Rock	Arkansas
Barbara	Brunasso	La Crescenta	California
Joseph	Dynesko	Coatesville	Pennsylvania
Phyllis	Elrod	Fort Oglethorpe	Georgia
Nicholas	Fillucco	Little Ferry	New Jersey
Clinton	Frazier	Sharpsburg	Georgia
James	Giedinghagen	Saint Charles	Missouri
Lynda	Hale	Olive Branch	Mississippi
Carol	Hammond	New Haven	Indiana
Patricia	Heffernan	Lyme	Connecticut
Michael	Hill	Stratham	New Hampshire
Richard	Hollingsworth	Discovery Bay	California

Myrtle	Hunt	Fort Worth	Texas
Sandra	Lanie	Ihlen	Minnesota
Mary	Liskowiak	Rio Rancho	New Mexico
Dana	Little	Prescott	Arkansas
Francis	Merritt	Slidell	Louisiana
Selton	Mitchell	Smyrna	Georgia
Scott	O'Brien	Clinton	Utah
John	Oshima	Minneapolis	Minnesota
Leslie	Peters	Cleveland	Ohio
Chay	Ponlork	Poughquag	New York
Teresa	Posey	Tucson	Arizona
Vickie	Presley	Springfield	Missouri
Jeanette	Presnell	Port Saint Joe	Florida
Cynthia	Rison	Spokane	Washington
Susan	Rizzo-Noles	Huntsburg	Ohio
Michael	Roark	Santee	California
Harvey	Rubenstein	Thiells	New York
Scott	Schaeffer	Fountain Hills	Arizona
Ronnie	Schaller	Paris	Tennessee
Janice	Scharkowski	Burke	Virginia
Boris	Schulha	Trabuco Canyon	California
Keith	Shinbara	Commerce City	Colorado
Robin	Sieber	Halifax	North Carolina
Frank	St. Clair	Commerce Township	Michigan
Richard	Stork	Defiance	Ohio
Jerry	Taylor	Sandpoint	Idaho
Holly	Verdiguel	Racine	Wisconsin
Glenda	Wanless	Isanti	Minnesota
Norlin	Winkler	Rochester	Minnesota

Main Motion C-11.01

Rescind the Practice Standards for Medical Imaging and Radiation Therapy Preface

The Practice Standards Council moves to rescind The Practice Standards for Medical Imaging and Radiation Therapy Preface, pages i-v.

~~Preface~~

~~In October 2004 a group of radiologic science professionals involved with the development of the *Practice Standards for Medical Imaging and Radiation Therapy* convened in Albuquerque, N.M., to discuss the need for revision of the standards. Since the development and adoption of the *Practice Standards for Medical Imaging and Radiation Therapy*, several changes have occurred in the profession. These changes include the creation of the radiologist assistant advanced practice, the emergence of bone densitometry as a credentialed practice, the division of the cardiovascular-interventional radiography practice into the more specialized practices of cardiac-interventional radiography and vascular-interventional radiography, and the need to develop standards for limited x-ray machine operators.~~

~~The group formed a selection committee consisting of the remaining members of the standards development group, in addition to individuals who indicated an interest in becoming involved in the standards revision and development process. To facilitate communication and research among the participants and provide general overall support, the ASRT Office of Practice Issues was designated as the coordinator for the standards revision project.~~

~~The selection committee established the parameters on organizing the Practice Standards Advisory Council (PSAC). The committee would select 12 members to the PSAC representing each practice area plus at-large members and one public member not presently working in the health care field. Nominations were accepted from mid-October through the end of 2004 with the actual selection process occurring in January 2005. During the nominations period the ASRT filed with the U. S. Department of Justice for protection under the Standards~~ ~~Development Organization Protection Act of 2004.~~

~~The PSAC convened in March 2005. At this meeting, the council elected officers, established practice area committees, and named PSAC liaisons to those committees. The committees' tasks were to review the standards and update them, or create standards for those practice areas that did not have standards. The committees were: radiologist assistant, radiography, mammography, bone densitometry, magnetic resonance, cardiovascular-interventional, vascular-interventional, cardiac-interventional, radiation therapy, nuclear medicine, and sonography. The PSAC decided to develop standards for limited x-ray machine operators but the standards would be developed by a subcommittee from among the members of the Radiography committee.~~

~~The format of general and specific criteria was retained. General criteria apply to all practice areas, and Specific Criteria apply to the specific practice area. Sections listing the scope of practice for each specific area were added. Additional advisory opinions will be issued by the PSAC as questions are posed and those opinions will be published.~~
~~Throughout 2005 and 2006, the committees developed scopes of practice for their respective practice areas, and developed or refined them. The standards were posted in September 2006 for public view and to receive public comment. The PSAC convened in October 2006 to review the comments and make any necessary changes based on the comments. Additional input and~~

comments for the radiologist assistant standards were provided by the American College of Radiology (ACR), the National Society of Radiology Practitioner Assistants (NSRPA), and the Certification Board for Radiology Practitioner Assistants (CBRPA).

This edition of the *Practice Standards for Medical Imaging and Radiation Therapy* represents the collective work of many people who dedicated their talents and time to this endeavor. To all who were involved, a sincere thank you.

Practice Standards Advisory Council

Rosann Keller, M.Ed., R.T.(T), Radiation Therapy Representative – PSAC Chair 2006-2007.
Rebecca Ludwig, Ph.D., R.T.(R)(QM), FAEIRS, Radiologist Assistant Representative – PSAC Chair-elect.
Ann Obergfell, J.D., R.T.(R), Radiography Representative – PSAC Chair 2005-2006.
J. Barry Bitzer, B.A., Public Member.
Michael Bloyd, B.S.N., R.N., R.T.(R), Member at-large.
Mary Lea Curtis, R.T.(R)(CT)(MR), CT and MR Representative.
Victoria (Mitzi) Drey, R.T.(R)(CV), CV, CI and VI Representative.
Pam Johnson, B.S., R.T.(R)(BD), CDT, Member at-large.
Edna Marr, R.T.(R)(M), Mammography Representative.
Denise Orth, M.S., R.T.(R)(M), Member at-large.
Carole South-Winter, M.Ed., R.T.(R), CNMT, Nuclear Medicine Representative.
Beth Weber, B.S., R.T.(R), RDMS, Sonography Representative.

Practice Committees

Radiography

Denise Orth, M.S., R.T.(R)(M) – PSAC Liaison, Co-chair.
Linda Croucher, M.S., R.T.(R)(CT) – Co-chair.
Robin Jones, M.S., R.T.(R).
Stephen Comer, A.A.S., CMRT.
Diane Newham, M.S., RT (R)(M)(CT)(QM).
Lee Erickson, R.T.(R).
Angie Arnold, M. Ed., R.T.(R).

LXMO Subcommittee:
Linda Croucher, M.S., R.T.(R)(CT)
Sharon Wartenbee, R.T.(R)(BD)
Barbara J. Smith, B.S., R.T.(R)(QM)
Vanessa Breeding.
Angie Arnold, M.Ed., R.T.(R)
Mitch Housenick.

Radiation Therapy

Rosann Keller, M.Ed., R.T.(T) – PSAC Liaison, Chair.
Jean Arnold, B.S., R.T.(R)(T).
Connie Bonner, R.T.(R)(T), CMD.
Donna Dunn, M.S., R.T.(T).
Bernadette Garofola, M.Ed., R.T.(R)(T)(CT).
Catherine Langford, R.T.,(R)(T).
Anne Maddeford, M.Ac.O.M., M.S., L.Ac., R.T.(T).
Kevin Rush, M.H.A, R.T.(R)(T).

~~Kristine Saeger, M.S., R.T.(R)(T).~~

~~Nuclear Medicine~~
~~Carole South-Winter, M.Ed., R.T.(R), CNMT – PSAC Liaison, Chair.~~
~~Wynn J. Harrison, M.Ed., R.T.(R)(N), CNM.~~
~~Barbara W. Hente, R.T.(N),CNMT, FASRT.~~
~~David C. Custis, R.T.(R)(N), CNMT.~~
~~Lisa R. Stocks-Brush, R.T.(R), CNMT.~~
~~Lyn Mehlberg, B.S., CNMT, FSNMTS.~~

~~Bone Densitometry~~
~~Pam Johnson, B.S., R.T.(R)(BD), CDT – PSAC Liaison, Chair.~~
~~Barbara "Bonnie" Blunt, R.T.(R)(BD).~~
~~Joann Caudill, R.T.(R)(BD), CDT.~~
~~Sharon Wartenbee, R.T.(R)(BD),CDT.~~
~~Michelle Heater, R.T.(R)(M)(BD)~~

~~Cardiovascular-interventional, Cardiac-interventional, Vascular-interventional~~
~~Victoria (Mitzi) Drey, R.T.(R)(CV) – PSAC Liaison, Chair~~
~~Steve Miles, B.S., R.T.(R)(CV)(CT).~~
~~James Murray, R.T.(R) (CV), RCIS.~~
~~Lois Layne B.S., R.T.(R)(CV).~~
~~Deborah Herndon B.S., R.T.(R)(CV).~~
~~Annette Murray R.T.(R)(CV).~~

~~Computed Tomography~~
~~Diane Newham, M.S., RT (R)(M)(CT)(QM) – Chair.~~
~~Mary Curtis, R.T.(R)(CT)(MR), PSAC Liaison.~~
~~Karen Williamson, R.T.(R)(CT).~~
~~Mike Enriquez, M.P.A., R.T.(R)(CT).~~
~~Katie Pelant, R.T.(R)(CT).~~
~~Nina Kowalczyk, R.T.(R)(CT)(QM),FASRT.~~
~~Pam Dunster, R.T.(R)(CT).~~
~~Pat Halley, RT (R)(CV)(CT)~~
~~Patty Richards, RT (R)(M)(CT).~~
~~Suzanne Fisher, RT(R)(CT).~~
~~Allen Croat, R.T. (R)(CT), FASRT.~~

~~Magnetic Resonance~~
~~Gary Duehring, Ph.D.,CRA,R.T.(R)(MR), FAHRA – Chair.~~
~~Mary Curtis, R.T.(R)(CT)(MR), PSAC Liaison.~~
~~Tamara Lee, B.S.,R.T.(R)(CT)(MR)~~
~~Bart Pierce, B.S., R.T.(R)(MR)~~
~~Cathy Dressen, B.S., R.T.(R)(MR)~~
~~Pam Dunster, R.T.(R)(CT).~~
~~Rex Miller, R.T. (R)(MR).~~
~~Dava Smith, R.T. (R)(CT)(MR).~~
~~Christina Thomas, R.T. (R)(MR).~~

~~Mammography~~

Edna Marr, R.T.(R)(M) – PSAC Liaison, Chair.
Donna Bell, B.S. R.T.(R)(M).
Patricia K. Haecker, R.T.(R).
Monica Hendricks, R.T.(R)(M)(BS).
Diane Newham, R.T.(R)(M)(CT)(QM).
Bonnie Rush, R.T.(R)(M)(QM).
Donita L. Shipman, R.T.(R).
Sharon Tabler, R.T.(R)(M).

Radiologist Assistant
Rebecca Ludwig, Ph.D., R.T.(R)(QM), FAEIRS - PSAC Liaison, Chair.
Laura Alipoon, Ed.D., R.T.(R).
Gladys Montane, R.T. (R)(M).
John Larsen, R.T.(R)(M)(QM).
Nina Kowalczyk, R.T.(R)(CT)(QM), FASRT.
Terri Bruckner, R.T.(R)(CV).
Joann Yokley, R.R.A., R.T.(R)(CV)(M).
Tricia Leggett, M.S.Ed., R.T.(R)(QM).
Joy Renner, M.A.,B.S., R.T.(R).

Sonography
Beth Weber, B.S., R.T.(R), RDMS – PSAC Liaison, Chair.
Liana Watson, M.B.A., R.T.(R)(M)(S)(BS), RDMS, RVT, FASRT.
David Hill, R.T.(R), RDMS.
Dawn McNeil, M.S.,R.T.(R)(M).
JoEllen (Norwick) Deschamp B.S., R.T.(R), RDMS.

ASRT Staff Support
Ellen Lipman, M.S., R.T.(R)(MR).
Peter Shams-Avari, B.A.

Main Motion C-11.02

Amend the Bone Densitometry Practice Standards

The Practice Standards Council moves to amend the Bone Densitometry Practice Standards, pages BD 1-32, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Bone Densitometry Practice Standards

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 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 Bone Densitometry Practice Standards

Definition

The practice of bone densitometry is performed by a segment of health care professionals responsible for the administration of ionizing radiation to humans and animals for diagnostic, therapeutic or research purposes. A bone densitometry technologist performs bone densitometry procedures and related techniques, producing data 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, bone densitometry technologists and support staff plays a critical role in the delivery of health services, it is the bone densitometry technologist who performs the bone densitometry examination and acquires and analyzes data needed for diagnosis.

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

Bone densitometry technologists must demonstrate an understanding of human anatomy, physiology, pathology and medical terminology.

Bone densitometry technologists must maintain a high degree of accuracy in positioning. They must possess, utilize and maintain knowledge about radiation protection and safety. Bone densitometry technologists independently perform or assist the licensed independent practitioner in the completion of densitometric procedures. Bone densitometry technologists monitor a patient's use of medications.

Bone densitometry technologists are the primary liaison between patients, licensed independent practitioners and other members of the support team. Bone densitometry 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, bone densitometry technologists participate in quality improvement

processes and continually assess their professional performance.

Bone densitometry 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

Bone densitometry technologists prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in medical imaging or radiation therapy and attaining appropriate primary certification by American Registry of Radiologic Technologists or Nuclear Medicine Technology Certification Board.

Eligibility to take the ARRT postprimary examination in bone densitometry requires appropriate primary certification at the time of examination and documentation of clinical experience in specific procedures. Those passing the bone densitometry postprimary examination, use the credentials R.T.(BD).

The International Society for Clinical Densitometry is another certifying agency. Individuals with the appropriate primary certification who pass the examination use the credential CBDT.

To maintain ARRT postprimary certification and/or ISCD certification, bone densitometry 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, bone densitometry 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 bone densitometry technologist is impractical because clinical activities vary by practice needs and expertise of the bone densitometry technologist. As bone densitometry technologists gain more experience, knowledge and clinical competence, the clinical activities for the bone densitometry 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 bone densitometry technologist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

-Bone Densitometry 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 bone densitometry technologist also includes:

1. Performing and analyzing bone densitometry scans.

Bone Densitometry Clinical Performance Standards

Standard One – Assessment

The bone densitometry 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 bone densitometry 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 bone densitometry technologist:

1. Locates and reviews previous examinations for comparison.

Bone Densitometry Clinical Performance Standards

Standard Two – Analysis/Determination

The bone densitometry 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 bone densitometry 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 bone densitometry technologist:

1. Identifies nonremovable artifacts in scan areas.

Bone Densitometry Clinical Performance Standards

Standard Three – Patient Education

The bone densitometry 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 bone densitometry technologist:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The bone densitometry 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 bone densitometry technologist:

1. Provides information regarding risks and benefits of radiation.

Bone Densitometry Clinical Performance Standards

Standard Four – Performance

The bone densitometry 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 bone densitometry 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 bone densitometry technologist:

1. Scans alternate sites when indicated.
2. Applies the concepts of accuracy and precision in bone densitometry.

Bone Densitometry Clinical Performance Standards

Standard Five – Evaluation

The bone densitometry 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 bone densitometry 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 bone densitometry technologist:

1. Evaluates and determines changes in the bone mineral density.

2. Reviews T-scores and Z-scores to modify the action plan.

3. Analyzes scan and corrects auto analysis of region of interest line placements.

4. Identifies and explains unexpected serial bone mineral density changes.

Bone Densitometry Clinical Performance Standards

Standard Six – Implementation

The bone densitometry 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 bone densitometry 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
None added.

Bone Densitometry Clinical Performance Standards

Standard Seven – Outcomes Measurement

The bone densitometry technologist reviews and evaluates the outcome of the procedure.

Rationale
To evaluate the quality of care, the bone densitometry 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 bone densitometry 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.

Bone Densitometry Clinical Performance Standards

Standard Eight – Documentation

The bone densitometry 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 bone densitometry 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
None added.

Bone Densitometry Quality Performance Standards

Standard One – Assessment

The bone densitometry 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 bone densitometry 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 bone densitometry technologist:

1. Participates in radiation protection, patient safety, risk management and quality management activities.

Bone Densitometry Quality Performance Standards

Standard Two – Analysis/Determination

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Quality Performance Standards

Standard Three – Education

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Quality Performance Standards

Standard Four – Performance

The bone densitometry 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 bone densitometry 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
None added.

Bone Densitometry Quality Performance Standards

Standard Five – Evaluation

The bone densitometry 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 bone densitometry technologist:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. Formulates an action plan.

Specific Criteria
None added.

Bone Densitometry Quality Performance Standards

Standard Six – Implementation

The bone densitometry 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 bone densitometry technologist:

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

2. Implements the quality assurance action plan.

Specific Criteria
None added.

Bone Densitometry Quality Performance Standards

Standard Seven – Outcomes Measurement

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Quality Performance Standards

Standard Eight – Documentation

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Professional Performance Standards

Standard One – Quality

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Professional Performance Standards

Standard Two – Self-Assessment

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Professional Performance Standards

Standard Three – Education

The bone densitometry 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 bone densitometry 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
None added.

Bone Densitometry Professional Performance Standards

Standard Four – Collaboration and Collegiality

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Professional Performance Standards

Standard Five – Ethics

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Professional Performance Standards

Standard Six – Research and Innovation

The bone densitometry 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 bone densitometry 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.

Bone Densitometry Advisory Opinion Statements

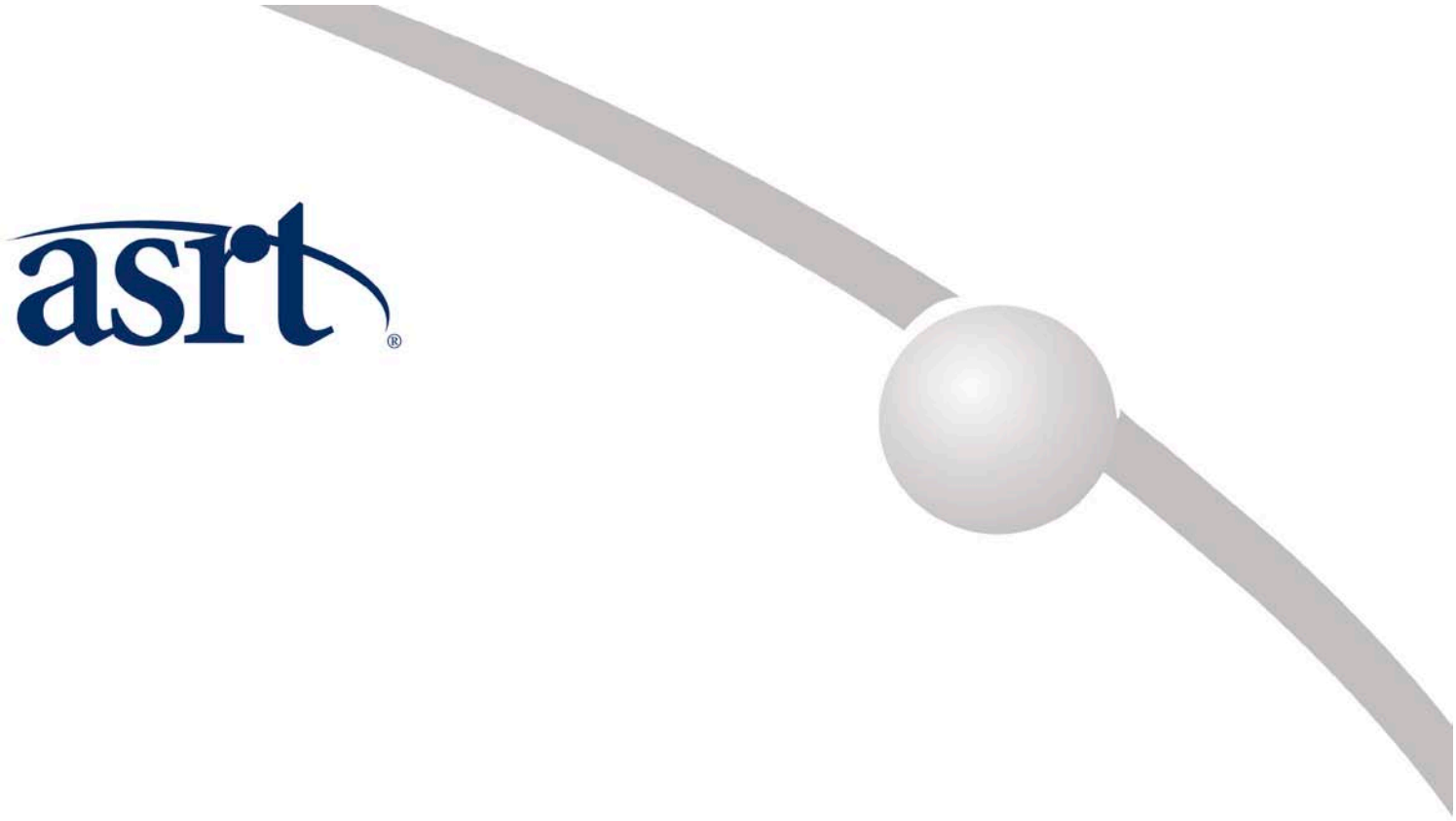
Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector.

Main Motion C-11.03

Amend the Cardiovascular-Interventional Technology Practice Standards

The Practice Standards Council moves to amend the Cardiovascular-interventional Technology Practice Standards, pages CV 1-33, by:

- Substitution.



The Practice Standards for Medical Imaging and Radiation Therapy

Cardiovascular Interventional Technology Practice Standards

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 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. Starting and 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.

Main Motion C-11.04

Rescind the Cardiac-interventional Radiography Practice Standards

The Practice Standards Council moves to rescind the Cardiac-interventional Radiography Practice Standards, pages CI 1-33.

~~Introduction to Cardiac-interventional Radiography Practice Standards~~

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

~~The complex nature of disease processes involves multiple imaging modalities. The cardiac-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, cardiac-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.~~

~~Cardiac-interventional radiography integrates scientific knowledge, technical skills, patient interaction, and care resulting in diagnostic information. A cardiac-interventional technologist recognizes patient conditions essential for successful completion of the procedure and exercises independent professional and ethical judgment.~~

~~Cardiac-interventional Technologist – General Requirements~~

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

~~Cardiac-interventional technologists must maintain a high degree of accuracy in radiographic positioning and exposure technique. They must maintain knowledge about radiation protection and safety. Cardiac-interventional technologists independently perform or assist the licensed practitioner in the completion of cardiac-interventional radiography procedures. Cardiac-interventional technologists prepare, administer, and document activities related to contrast media and medications in accordance with state and federal regulations or lawful institutional policy.~~

~~Cardiac-interventional technologists are the primary liaison between patients, licensed practitioners, and other members of the support team. Cardiac-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. Cardiac-interventional technologists use independent, professional, ethical judgment and critical thinking. Quality improvement and customer service allow the cardiac-interventional technologist to be a responsible member of the health care team by continually assessing professional performance. Cardiac-interventional technologists engage in continuing education to enhance patient care, public education, knowledge, and technical competence while embracing lifelong learning.~~

Education and Certification

Cardiac-interventional technologists prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiologic technology. Two-year certificate, associate degree, and four-year baccalaureate degree programs exist throughout the United States. Accredited programs must meet specific curricular and educational standards.

Upon completion of a course of study in radiologic technology from an accredited program recognized by the American Registry of Radiologic Technologists (ARRT), individuals may apply to take the national certification examination. Those who successfully complete the certification examination in radiography may use the credential R.T.(R) following their name; the R.T. signifies registered technologist and the (R) indicates radiography.

Cardiac-interventional technologists must be registered in radiography prior to sitting for the postprimary examination. Cardiac-interventional technologists who have successfully completed all primary and postprimary requirements use the credentials R.T.(R)(CI).

To maintain ARRT certification, cardiac-interventional technologists must complete appropriate continuing education requirements in order to sustain a level of expertise and awareness of changes and advances in practice.

Practice Standards

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.

Professional practice constantly changes as a result of a number of factors including technological advances, market and economic forces, and statutory and regulatory mandates. While a minimum standard of acceptable performance is appropriate and should be followed by all practitioners, it is inappropriate to assume that professional practice is the same in all regions of the United States.[1] Community custom, state statute, or regulation may dictate practice parameters. W*herever there is a conflict between these standards and state or local statutes and regulations, the state or local statutes and regulations supersede these standards*. Recognizing this, the profession has adopted standards that are general in nature.

A cardiac-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.

Format

The Practice Standards are divided into five sections: scope of practice, clinical performance, quality performance, professional performance and advisory opinion.

Scope of Practice. The scope of practice delineates the parameters of the radiography practice.

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[1] The terms "practice" and "practitioner" are used in all areas of the standards in place of the various names used in medical imaging and radiation therapy, such as radiologic technologist, sonographer, or radiation therapist. Practitioner is defined as any individual practicing in a specific area or discipline. The profession believes that any individual practicing in one of the defined disciplines or specialties should be held to a minimum standard of performance to protect the patients who receive professional services.

Clinical Performance Standards. The clinical performance standards define the activities of the practitioner 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 practitioner 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 practitioner 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.

A profession's practice standards serve as a guide for appropriate practice. Practice standards provide role definition for practitioners that 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 practitioner as defined by the profession.

Each 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 practitioner when performing the procedure or treatment. A rationale statement follows and explains why a practitioner should adhere to the particular standard of performance.

Criteria. Criteria are used in evaluating a practitioner'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 practitioners. These criteria are the same in all sections of the standards and should be used for the appropriate area of practice.

Specific Criteria. Specific criteria meet the needs of the practitioners 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.

Cardiac-interventional Technologist Scope of Practice

The scope of practice of cardiac-interventional radiography includes:

1. Performing diagnostic radiographic procedures.

2. Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed practitioner.

3. Preparing the patient for procedure; including providing instructions to obtain desired results, gain cooperation, and minimize anxiety.

4. Selecting and operating radiography equipment, imaging equipment to successfully perform procedures.

5. Positioning patient to best demonstrate anatomic area of interest, respecting patient ability and comfort.

6. Immobilizing patients as required for appropriate examination.

7. Determining radiographic technique exposure factors.

8. Applying principles of radiation protection to minimize exposure to patient, self, and others.

9. Evaluating radiographs or images for technical quality, assuring proper identification is recorded.

10. Assuming responsibility for provision of physical and psychological needs of patients during procedures.

11. Performing venipunctures where state statute(s) and/or institutional policy permits.

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

13. Verifying informed consent for, and assisting a licensed practitioner with, interventional procedures.

14. Assisting licensed practitioner with fluoroscopic and specialized interventional radiography procedures.

15. Performing noninterpretive fluoroscopic procedures as appropriate and consistent with applicable state statutes.

16. Initiating basic life support action when necessary.

17. Providing patient education.

18. Providing input for equipment purchase and supply decisions.

19. Providing practical instruction for students and/or other health care professionals.

20. Participating in the department's quality assessment and improvement plan.

21. Maintaining control of inventory and purchase of supplies for the assigned area.

22. Observing universal precautions.

23. Starting and maintaining intravenous (IV) access per orders when applicable.

Comprehensive Practice

Radiographic procedures are performed on any or all body organs, systems, or structures. Individuals demonstrate competency to meet state licensure, permit, or certification requirements defined by law for radiography, or maintain appropriate credentials.

Clinical Performance Standards

Standard One – Assessment

The practitioner 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
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.

General Criteria
The practitioner:

1. Uses consistent and appropriate techniques to gather 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 exam or procedure.

4. Verifies the patient's pregnancy status.

5. Determines whether the patient has been prepared for the procedure.

6. Corroborates patient's clinical history with procedure.

7. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation, or artifacts.

8. Recognizes signs and symptoms of an emergency.

Specific Criteria
The practitioner:

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.

Standard Two – Analysis/Determination

The practitioner 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
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.

General Criteria
The practitioner:

1. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.

2. Uses 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 practitioner:

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.

Standard Three – Patient Education

The practitioner 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
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.

General Criteria
The practitioner:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives, and follow-up. When appropriate, the practitioner 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 practitioner:

1. Explains precautions regarding administration of pharmaceuticals.

Standard Four – Performance

The practitioner performs the action plan.

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

General Stipulation
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.

General Criteria
The practitioner:

1. Performs procedural time-out.

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 basic life support in emergency situations.

7. Uses accessory equipment.

8. Assesses and monitors the patient's physical, emotional, and mental status.

9. Administers oxygen as prescribed.

10. Uses principles of sterile technique.

11. Positions patient for anatomic area of interest, respecting patient ability and comfort.

12. Immobilizes patient for examination.

Specific Criteria
The practitioner:

1. Monitors electrocardiogram (ECG), blood pressure (BP), respiration, oxygen saturation, and level of consciousness preprocedure, periprocedure, and postprocedure.

2. Prepares, sets, and implements appropriate technical parameters such as generators, power injectors, etc.

3. Administers pharmaceuticals.

4. Monitors the patient for reactions to pharmaceuticals.

5. Collects and documents tissue samples.

Standard Five – Evaluation

The practitioner 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
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.

General Criteria
The practitioner:

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. Documents exceptions in a timely, accurate, and comprehensive manner.

6. Develops a revised action plan if necessary to achieve the intended outcome.

7. Communicates revised action plan to appropriate team members.

Specific Criteria
None added.

Standard Six – Implementation

The practitioner implements the revised action plan.

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

General Stipulation
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.

General Criteria
The practitioner:

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 practitioner:

1. Adjusts imaging parameters, patient procedure, or computer-generated information to improve the outcome.

2. Performs routine and specialized postprocessing.

Standard Seven – Outcomes Measurement

The practitioner reviews and evaluates the outcome of the procedure.

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

General Stipulation
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.

General Criteria
The practitioner:

1. Reviews all diagnostic or therapeutic data for completeness and accuracy.

2. Determines 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 from the practitioner's care.

Specific Criteria
None added.

Standard Eight – Documentation

The practitioner 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
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.

General Criteria
The practitioner:

1. Documents diagnostic, treatment, and patient data in the record in a timely, accurate, and comprehensive manner.

2. Documents exceptions from the established criteria or procedures.

3. Provides appropriate information to authorized individual(s) involved in the patient's care.

4. Participates in billing and coding procedures.

5. Archives images or data.

Specific Criteria
The practitioner:

1. Obtains and documents data in the record preprocedure, periprocedure, and postprocedure.

2. Documents fluoroscopy time.

3. Documents use of conscious sedation.

4. Documents procedural time-out.

5. Documents radiation exposure parameters.

Cardiac-interventional Quality Performance Standards

Standard One – Assessment

The practitioner 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
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.

General Criteria
The practitioner:

1. Determines that services are performed in a safe environment, free from any potential hazards.

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 practitioner:

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.

Standard Two – Analysis/Determination

The practitioner 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
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.

General Criteria
The practitioner:

1. Assesses services, procedures, and environment 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 practitioner:

1. Maintains documentation for tracking implantable devices.

Standard Three – Education

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

Rationale
Open communication promotes safe practices.

General Stipulation
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.

General Criteria
The practitioner:

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.

Standard Four – Performance

The practitioner performs quality assurance activities.

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

General Stipulation
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.

General Criteria
The practitioner:

1. Acquires information on equipment, materials, and processes.

2. Performs quality assurance activities.

3. Provides evidence of ongoing quality assurance activities.

4. Verifies performance and results of quality control of imaging and support equipment.

Specific Criteria
The practitioner:

1. Provides a safe and sterile environment for patients and staff.

2. Monitors image production to determine technical acceptability.

Standard Five – Evaluation

The practitioner 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
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.

General Criteria
The practitioner:

1. Verifies quality assurance testing conditions and results.

2. Compares quality assurance results to accepted values.

3. Formulates an action plan following the comparison of results.

4. Participates in the institution's quality assessment and improvement plan.

Specific Criteria
None added.

Standard Six – Implementation

The practitioner 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
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.

General Criteria
The practitioner:

1. Obtains assistance from qualified personnel to support the quality assurance action plan.

2. Implements the quality assurance action plan.

Specific Criteria
None added.

Standard Seven – Outcomes Measurement

The practitioner 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
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.

General Criteria
The practitioner:

4. Reviews the implementation process for accuracy and validity.

5. Determines that actual outcomes are in compliance with the action plan.

6. Develops and implements a modified action plan.

Specific Criteria
None added.

Standard Eight – Documentation

The practitioner documents quality assurance activities and results.

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

General Stipulation
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.

General Criteria
The practitioner:

1. Maintains documentation of quality assurance activities, procedures, and results.

2. Provides timely, accurate, and comprehensive documentation.

3. Provides documentation that adheres to protocol, policy, and procedures.

4. Reports the need for equipment maintenance and repair.

Specific Criteria
None added.

Cardiac-interventional Professional Performance Standards

Standard One – Quality

The practitioner strives to provide optimal patient care.

Rationale
Patients expect and deserve optimal care during diagnosis and treatment.

General Stipulation
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.

General Criteria
The practitioner:

7. Collaborates with others to elevate the quality of care.

8. Participates in quality assurance programs.

9. Adheres to standards, policies, and procedures adopted by the profession and regulated by law.

10. Applies professional judgment and discretion while performing diagnostic study or treatment.

11. Anticipates and responds to patient needs.

12. Respects cultural variations and addresses misconceptions.

Specific Criteria
None added.

Standard Two – Self-Assessment

The practitioner evaluates personal performance.

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

General Stipulation
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.

General Criteria
The practitioner:

1. Monitors personal work ethics, behaviors, and attitudes.

2. Evaluates performance and recognizes opportunities for self-improvement.

3. Recognizes and applies personal and professional strengths.

4. Performs procedures only when educationally prepared and clinically competent.

5. Recognizes opportunities for educational growth and improvement in technical and problem-solving skills.

6. Actively participates in professional societies and organizations.

Specific Criteria
None added.

Standard Three – Education

The practitioner acquires and maintains current knowledge in clinical practice.

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

General Stipulation
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.

General Criteria
The practitioner:

1. Demonstrates completion of education related to clinical practice.

2. Maintains credentials and certification related to clinical practice.

3. Participates in continuing education and case review to maintain and enhance competency and performance.

4. Shares knowledge and expertise with others.

5. Demonstrates understanding of and continued competency in the functions and operations of equipment, accessories, treatment and imaging methods, and protocols.

Specific Criteria
None added.

Standard Four – Collaboration and Collegiality

The practitioner promotes a positive, 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
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.

General Criteria
The practitioner:

7. Shares knowledge and expertise with members of the health care team.

8. Develops collaborative partnerships to enhance diagnostic and therapeutic quality and efficiency.

9. Promotes understanding of the profession.

Specific Criteria
None added.

Standard Five – Ethics

The practitioner 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
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.

General Criteria
The practitioner:

7. Provides health care services with respect for the patient's dignity, age-specific needs, and culture.

8. Acts as a patient advocate to support patients' rights.

9. Takes responsibility for professional 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
None added.

Standard Six – Research and Innovation

The practitioner 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
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.

General Criteria
The practitioner:

1. Reads and critically evaluates research in diagnostic and therapeutic services.

2. Participates in data collection.

3. Investigates innovative methods for application in practice.

4. Shares information with colleagues through publication, presentation, and collaboration.

5. Adopts new best practices.

6. Pursues lifelong learning.

Specific Criteria
None added.

Cardiac-interventional Advisory Opinion Statements

Main Motion C-11.05

Rescind the Vascular-interventional Radiography Practice Standards

The Practice Standards Council moves to rescind the Vascular-interventional Radiography Practice Standards, pages VI 1-33.

~~Introduction to Vascular-interventional Radiography Practice Standards~~

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

~~The complex nature of disease processes involves multiple imaging modalities. The vascular-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, vascular-interventional technologists, nurses, cardiologists, and registered vascular invasive specialists. These team members form a core of highly trained health care professionals who each bring expertise to the area of patient care.~~

~~Vascular-interventional radiography integrates scientific knowledge, technical skills, patient interaction, and care resulting in diagnostic information. A vascular-interventional technologist recognizes patient conditions essential for successful completion of the procedure and exercises independent professional and ethical judgment.~~

~~Vascular-interventional Technologist – General Requirements~~

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

~~Vascular-interventional technologists must maintain a high degree of accuracy in radiographic positioning and exposure technique. They must maintain knowledge about radiation protection and safety. Vascular-interventional technologists independently perform or assist the licensed practitioner in the completion of vascular-interventional procedures. Vascular-interventional technologists prepare, administer, and document activities related to contrast media and medications in accordance with state and federal regulations or lawful institutional policy.~~

~~Vascular-interventional technologists are the primary liaison between patients, licensed practitioners, and other members of the support team. Vascular-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. Vascular-interventional technologists use independent, professional, ethical judgment and critical thinking. Quality improvement and customer service allow the vascular-interventional technologist to be a responsible member of the health care team by continually assessing professional performance. Vascular-interventional technologists engage in continuing education to enhance patient care, public education, knowledge, and technical competence while embracing lifelong learning.~~

~~Education and Certification~~

~~Vascular-interventional technologists prepare for their role on the interdisciplinary team by~~

successfully completing an accredited educational program in radiologic technology. Two-year certificate, associate degree, and four-year baccalaureate degree programs exist throughout the United States. Accredited programs must meet specific curricular and educational standards.

Upon completion of a course of study in radiologic technology from an accredited program recognized by the American Registry of Radiologic Technologists (ARRT), individuals may apply to take the national certification examination. Those who successfully complete the certification examination in radiography may use the credential R.T.(R) following their name; the R.T. signifies registered technologist and the (R) indicates radiography.

Vascular-interventional technologists must be registered in radiography prior to sitting for the postprimary examination. Vascular-interventional technologists who have successfully completed all primary and postprimary requirements use the credentials R.T.(R)(VI).

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

Practice Standards

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.

Professional practice constantly changes as a result of a number of factors including technological advances, market and economic forces, and statutory and regulatory mandates. While a minimum standard of acceptable performance is appropriate and should be followed by all practitioners, it is inappropriate to assume that professional practice is the same in all regions of the United States.[2] Community custom, state statute, or regulation may dictate practice parameters. W*herever there is a conflict between these standards and state or local statutes and regulations, the state or local statutes and regulations supersede these standards*. Recognizing this, the profession has adopted standards that are general in nature.

A vascular-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.

Format

The Practice Standards are divided into five sections: scope of practice, clinical performance, quality performance, professional performance and advisory opinion.

Scope of Practice. The scope of practice delineates the parameters of the radiography practice.

Clinical Performance Standards. The clinical performance standards define the activities of the practitioner in the care of patients and delivery of diagnostic or therapeutic procedures. The

[2] The terms "practice" and "practitioner" are used in all areas of the standards in place of the various names used in medical imaging and radiation therapy, such as radiologic technologist, sonographer, or radiation therapist. Practitioner is defined as any individual practicing in a specific area or discipline. The profession believes that any individual practicing in one of the defined disciplines or specialties should be held to a minimum standard of performance to protect the patients who receive professional services.

section incorporates patient assessment and management with procedural analysis, performance, and evaluation.

Quality Performance Standards. The quality performance standards define the activities of the practitioner 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 practitioner 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.

A profession's practice standards serve as a guide for appropriate practice. Practice standards provide role definition for practitioners that 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 practitioner as defined by the profession.

Each 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 practitioner when performing the procedure or treatment. A rationale statement follows and explains why a practitioner should adhere to the particular standard of performance.

Criteria. Criteria are used in evaluating a practitioner'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 practitioners. These criteria are the same in all sections of the standards and should be used for the appropriate area of practice.

Specific Criteria. Specific criteria meet the needs of the practitioners 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.

Vascular-interventional Technologist Scope of Practice

The scope of practice of the vascular-interventional technologist includes:

23. Performing diagnostic radiographic procedures.

24. Corroborating patient's clinical history with procedure, ensuring information is documented and available for use by a licensed practitioner.

25. Preparing the patient for procedures, including providing instructions to obtain desired

~~results, gain cooperation, and minimize anxiety.~~

~~26. Selecting and operating imaging equipment, and/or associated accessories to successfully perform procedures.~~

~~27. Positioning patient to best demonstrate anatomic area of interest, respecting patient ability and comfort.~~

~~28. Immobilizing patients as required for appropriate examination.~~

~~29. Determining radiographic technique exposure factors.~~

~~30. Applying principles of radiation protection to minimize exposure to patient, self, and others.~~

~~31. Evaluating radiographs or images for technical quality, ensuring proper identification is recorded.~~

~~32. Assuming responsibility for provision of physical and psychological needs of patients during procedures.~~

~~33. Performing venipunctures where state statute(s) and/or institutional policy permits.~~

~~34. Identifying, preparing and/or administering medications as prescribed by a licensed practitioner.~~

~~35. Verifying informed consent for, and assisting a licensed practitioner with, interventional procedures.~~

~~36. Assisting licensed practitioner with fluoroscopic and specialized interventional radiography procedures.~~

~~37. Performing noninterpretive fluoroscopic procedures as appropriate and consistent with applicable state statutes.~~

~~38. Initiating basic life support action when necessary.~~

~~39. Providing patient education.~~

~~40. Providing input for equipment purchase and supply decisions.~~

~~41. Providing practical instruction for students and/or other health care professionals.~~

~~42. Participating in the department's quality assessment and improvement plan.~~

~~43. Maintaining control of inventory and purchase of supplies for the assigned area.~~

~~44. Observing universal precautions.~~

23. Starting and maintaining intravenous (IV) access per orders when applicable.

Comprehensive Practice

Radiographic procedures are performed on any or all body organs, systems, or structures. Individuals demonstrate competency to meet state licensure, permit, or certification requirements defined by law for radiography, or maintain appropriate credentials.

Clinical Performance Standards

Standard One – Assessment

The practitioner 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

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.

General Criteria

The practitioner:

1. Uses consistent and appropriate techniques to gather 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 exam or procedure.

4. Verifies the patient's pregnancy status.

5. Determines whether the patient has been prepared for the procedure.

6. Corroborates patient's clinical history with procedure.

7. Assesses factors that may contraindicate the procedure, such as medications, patient history, insufficient patient preparation, or artifacts.

8. Recognizes signs and symptoms of an emergency.

Specific Criteria

The practitioner:

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.

Standard Two – Analysis/Determination

The practitioner 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
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.

General Criteria
The practitioner:

7. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.

8. Uses 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 practitioner:

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.

Standard Three – Patient Education

The practitioner 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
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.

General Criteria
The practitioner:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives, and follow-up. When appropriate, the practitioner 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 practitioner:

1. Explains precautions regarding administration of pharmaceuticals.

Standard Four – Performance

The practitioner performs the action plan.

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

General Stipulation
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.

General Criteria
The practitioner:

13. Performs procedural time-out.

14. Implements an action plan.

15. Explains each step of the action plan to the patient as it occurs and elicits the cooperation of the patient.

16. Uses an integrated team approach.

17. Modifies the action plan according to changes in the clinical situation.

18. Administers first aid or provides basic life support in emergency situations.

19. Uses accessory equipment.

20. Assesses and monitors the patient's physical, emotional, and mental status.

21. Administers oxygen as prescribed.

22. Uses principles of sterile technique.

23. Positions patient for anatomic area of interest, respecting patient ability and comfort.

24. Immobilizes patient for examination.

Specific Criteria
The practitioner:

1. Monitors electrocardiogram (ECG), blood pressure (BP), respiration, oxygen saturation, and level of consciousness preprocedure, periprocedure, and postprocedure.

2. Prepares, sets, and implements appropriate technical parameters such as generators, power injectors, etc.

3. Administers pharmaceuticals.

4. Monitors the patient for reactions to pharmaceuticals.

5. Collects and documents tissue samples.

Standard Five – Evaluation

The practitioner 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
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.

General Criteria
The practitioner:

8. Evaluates the patient and the procedure to identify variances that may affect the expected outcome.

9. Completes the evaluation process in a timely, accurate, and comprehensive manner.

10. Measures the procedure against established policies, protocols, and benchmarks.

11. Identifies exceptions to the expected outcome.

12. Documents exceptions in a timely, accurate, and comprehensive manner.

13. Develops a revised action plan if necessary to achieve the intended outcome.

14. Communicates revised action plan to appropriate team members.

Specific Criteria
None added.

Standard Six – Implementation

The practitioner implements the revised action plan.

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

General Stipulation
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.

General Criteria
The practitioner:

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 practitioner:

3. Adjusts imaging parameters, patient procedure, or computer-generated information to improve the outcome.

4. Performs routine and specialized postprocessing.

Standard Seven – Outcomes Measurement

The practitioner reviews and evaluates the outcome of the procedure.

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

General Stipulation
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.

General Criteria
The practitioner:

5. Reviews all diagnostic or therapeutic data for completeness and accuracy.

6. Determines 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 from the practitioner's care.

Specific Criteria
None added.

Standard Eight – Documentation

The practitioner 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
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.

General Criteria
The practitioner:

6. Documents diagnostic, treatment, and patient data in the record in a timely, accurate, and comprehensive manner.

7. Documents exceptions from the established criteria or procedures.

8. Provides appropriate information to authorized individual(s) involved in the patient's care.

9. Participates in billing and coding procedures.

10. Archives images or data.

Specific Criteria
The practitioner:

6. Obtains and documents data in the record preprocedure, periprocedure, and

postprocedure.

7. Documents fluoroscopy time.

8. Documents use of conscious sedation.

9. Documents procedural time-out.

10. Documents radiation exposure parameters.

Vascular-interventional Quality Performance Standards

Standard One – Assessment

The practitioner 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
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.

General Criteria
The practitioner:

4. Determines that services are performed in a safe environment, free from any potential hazards.

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 practitioner:

4. Maintains controlled access to restricted area during radiation exposure.

5. Maintains and performs quality control on radiation safety equipment such as aprons, thyroid shields, etc.

6. Participates in radiation protection, patient safety, risk management, and quality management activities.

Standard Two – Analysis/Determination

The practitioner 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
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.

General Criteria
The practitioner:

4. Assesses services, procedures, and environment 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 practitioner:

2. Maintains documentation for tracking implantable devices.

Standard Three – Education

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

Rationale
Open communication promotes safe practices.

General Stipulation
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.

General Criteria
The practitioner:

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.

Standard Four – Performance

The practitioner performs quality assurance activities.

Rationale

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

General Stipulation

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.

General Criteria

The practitioner:

5. Acquires information on equipment, materials, and processes.

6. Performs quality assurance activities.

7. Provides evidence of ongoing quality assurance activities.

8. Verifies performance and results of quality control of imaging and support equipment.

Specific Criteria

The practitioner:

3. Provides a safe and sterile environment for patients and staff.

4. Monitors image production to determine technical acceptability.

Standard Five – Evaluation

The practitioner 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

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.

General Criteria

The practitioner:

5. Verifies quality assurance testing conditions and results.

6. Compares quality assurance results to accepted values.

7. Formulates an action plan following the comparison of results.

8. Participates in the institution's quality assessment and improvement plan.

Specific Criteria
None added.

Standard Six – Implementation

The practitioner 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
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.

General Criteria
The practitioner:

1. Obtains assistance from qualified personnel to support the quality assurance action plan.

2. Implements the quality assurance action plan.

Specific Criteria
None added.

Standard Seven – Outcomes Measurement

The practitioner 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
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.

General Criteria
The practitioner:

7. Reviews the implementation process for accuracy and validity.

8. Determines that actual outcomes are in compliance with the action plan.

9. Develops and implements a modified action plan.

Specific Criteria
None added.

Standard Eight – Documentation

The practitioner documents quality assurance activities and results.

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

General Stipulation
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.

General Criteria
The practitioner:

5. Maintains documentation of quality assurance activities, procedures, and results.

6. Provides timely, accurate, and comprehensive documentation.

7. Provides documentation that adheres to protocol, policy, and procedures.

8. Reports the need for equipment maintenance and repair.

Specific Criteria
None added.

Vascular-interventional Professional Performance Standards

Standard One – Quality

The practitioner strives to provide optimal patient care.

Rationale
Patients expect and deserve optimal care during diagnosis and treatment.

General Stipulation
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.

General Criteria
The practitioner:

13. Collaborates with others to elevate the quality of care.

14. Participates in quality assurance programs.

15. Adheres to standards, policies, and procedures adopted by the profession and regulated by law.

16. Applies professional judgment and discretion while performing diagnostic study or treatment.

17. Anticipates and responds to patient needs.

18. Respects cultural variations and addresses misconceptions.

Specific Criteria
None added.

Standard Two – Self-Assessment

The practitioner evaluates personal performance.

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

General Stipulation
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.

General Criteria
The practitioner:

7. Monitors personal work ethics, behaviors, and attitudes.

8. Evaluates performance and recognizes opportunities for self-improvement.

9. Recognizes and applies personal and professional strengths.

10. Performs procedures only when educationally prepared and clinically competent.

11. Recognizes opportunities for educational growth and improvement in technical and problem-solving skills.

12. Actively participates in professional societies and organizations.

Specific Criteria
None added.

Standard Three – Education

The practitioner acquires and maintains current knowledge in clinical practice.

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

General Stipulation
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.

General Criteria
The practitioner:

6. Demonstrates completion of education related to clinical practice.

7. Maintains credentials and certification related to clinical practice.

8. Participates in continuing education and case review to maintain and enhance competency and performance.

9. Shares knowledge and expertise with others.

10. Demonstrates understanding of and continued competency in the functions and operations of equipment, accessories, treatment and imaging methods, and protocols.

Specific Criteria
None added.

Standard Four – Collaboration and Collegiality

The practitioner promotes a positive, 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
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.

General Criteria
The practitioner:

10. Shares knowledge and expertise with members of the health care team.

11. Develops collaborative partnerships to enhance diagnostic and therapeutic quality and efficiency.

12. Promotes understanding of the profession.

Specific Criteria
None added.

Standard Five – Ethics

The practitioner 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
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.

General Criteria
The practitioner:

13. Provides health care services with respect for the patient's dignity, age-specific needs, and culture.

14. Acts as a patient advocate to support patients' rights.

15. Takes responsibility for professional 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.

Standard Six – Research and Innovation

The practitioner 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
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.

General Criteria
The practitioner:

7. Reads and critically evaluates research in diagnostic and therapeutic services.

8. Participates in data collection.

9. Investigates innovative methods for application in practice.

10. Shares information with colleagues through publication, presentation, and collaboration.

11. Adopts new best practices.

12. Pursues lifelong learning.

Specific Criteria
None added.

Vascular-interventional Advisory Opinion Statements

Main Motion C-11.06

Amend the Computed Tomography Practice Standards

The Practice Standards Council moves to amend the Computed Tomography Practice Standards, pages CT 1-34, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Computed Tomography Practice Standards

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 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 sectional and three-dimensional images at the request of and for interpretation by a licensed independent practitioner; assists with interventional and therapeutic procedures and may perform fusion procedures.

The complex nature of disease processes involves multiple imaging modalities. Although an interdisciplinary team of radiologists, computed tomography technologists and support staff plays a critical role in the delivery of health services, it is the computed tomography technologist who performs and reformats the computed tomography examination that creates the 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, assesses and monitors patient vital signs, and takes appropriate action in emergency situations essential for successful completion of the procedure and to maintain quality patient care. A computed tomography technologist exercises independent professional and ethical judgment.

Computed tomography technologists must demonstrate an understanding of human anatomy, human physiology, pathology, pharmacology, computer technology, basic patient care and assessment techniques, radiation physics, radiation biology, radiation protection and medical terminology.

Computed tomography technologists must maintain a high degree of accuracy in positioning and exposure technique. They must possess, utilize and maintain knowledge about radiation protection, safety and current scanning protocols. Computed tomography technologists

independently perform or assist the licensed practitioner in the completion of diagnostic, therapeutic, interventional, and fusion computed tomography procedures. 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 are the primary liaison between patients, licensed independent practitioners, and other members of the support team. Computed tomography 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, 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 enhance patient care, 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. Two-year certificate, associate degree and four-year baccalaureate degree programs exist throughout the United States. Accredited programs must meet specific curricular and educational standards.

Upon completion of a course of study in radiography, radiation therapy or nuclear medicine technology from an accredited program recognized by the American Registry of Radiologic Technologists, individuals may apply to take the national certification examination. Those who successfully complete the certification examination in radiography may use the credential R.T.(R) following their name; the R.T. signifies registered technologist and the (R) indicates radiography. Those who successfully complete the certification examination in radiation therapy may use the credential R.T.(T) following their name; R.T. signifies registered technologist and the (T) indicates radiation therapy. Those who successfully complete the certification examination in nuclear medicine technology may use the credential R.T.(N) following their name; the R.T signifies registered technologist and the (N) indicates nuclear medicine technology.

The Nuclear Medicine Technology Certification Board (NMTCB) also is a certifying agency. Once the NMTCB determines an applicant is eligible for the examination, the applicant must take the certification examination within the prescribed time period established by the NMTCB. Those who successfully complete this certification examination may use the credential CNMT, indicating certified nuclear medicine technologist.

Eligibility to take the postprimary examination in computed tomography requires registration in radiography, nuclear medicine technology or radiation therapy at the time of examination and documentation of clinical experience and any necessary competencies in specific procedures. Certificates issued by the NMTCB are recognized as meeting the eligibility requirements for computed tomography certification and continued computed tomography registration through the ARRT. After successfully completing the computed tomography postprimary examination, the credentials R.T.(R)(CT), R.T.(T)(CT), or R.T.(N)(CT) may be used if registered by the ARRT and CNMT, R.T.(CT) ARRT if certified by the NMTCB.

To maintain ARRT 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. Introducing oneself appropriately to the patient and putting the patient at ease.
2. Performing computed tomography procedures as prescribed by a licensed independent practitioner.
3. Following the direction of a licensed independent practitioner, the computed tomography technologist assists with interventional computed tomography procedures and applies appropriate aseptic surgical technique as needed.
4. Maintaining archival storage of digitized data as appropriate and documenting patient dose exposures.
5. Assisting in maintaining patient records, respecting confidentiality and established policy.

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:

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 computed tomography technologist:

1. Assesses patient risk for allergic reaction to contrast media prior to administration.

2. Locates and reviews previous examinations for comparison.

3. Receives, relays, and documents verbal and/or telephone orders in the patient's chart.

4. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

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. Selects various power-up techniques, including routine, nonroutine and fast activation.

2. Determines optimum placement of electrocardiogram (ECG) electrodes.

3. Evaluates lab values prior to administering contrast media, beginning interventional procedures or fusion imaging.

4. Determines patient compliance with pre-examination preparation instructions (e.g., diet, medications).

5. Reviews the patient's medical record and the licensed independent practitioner's request to determine optimal scanning parameters for clinical indication.

6. Determines the appropriate type and dose of contrast media to be administered, based on the patient's age, weight and medical or physical status.

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. Instructs patients regarding examination preparation prior to imaging procedures.

2. Instructs patients regarding contrast considerations.

3. Provides information about risks and benefits of radiation.

4. Consults with other departments, such as patient transportation and anesthesia, 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. Performs venipuncture, verifies IV patency and maintains IV access.

2. Utilizes radiation shielding devices.

3. Utilizes technical factors according to equipment specifications to minimize radiation exposure to the patient.

4. Identifies positive cardiac R-wave trigger.

5. 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 retrospective reconstruction on raw data.

2. Performs routine and specialized postprocessing.

3. 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:

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 computed tomography technologist:

1. Archives images to data storage devices.

2. Documents radiation exposure parameters.

3. Documents administered radionuclide activity and volume.

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:

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 computed tomography technologist:

1. Participates in radiation protection, patient safety, risk management and quality management activities.

2. Performs area monitoring and surveys to assess radiation exposure levels and contamination sites.

3. Complies with federal and state laws to minimize radiation exposure levels.

4. Maintains controlled access to restricted area during radiation exposure.

5. Maintains and performs quality control on radiation safety equipment such as aprons, thyroid shields, etc.

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
The computed tomography technologist:

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

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
None added.

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. Performs quality testing on radioactive materials prior to administration.

4. Complies with radiation protection rules and standards.

5. Utilizes radiation detecting equipment.

6. Demonstrates safe handling, storage and disposal of radioactive materials.

7. Monitors shielding effectiveness.

8. 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:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. 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
The computed tomography technologist:

1. Employs devices to minimize radiation levels.

2. Uses decontamination procedures.

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
The computed tomography technologist:

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

2. Documents instrumentation quality testing procedures and maintains results for review.

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
The computed tomography technologist:

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

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:

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
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
The computed tomography technologist:

1. Instructs others in postprocedural radiation safety.

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:

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.

Computed Tomography Advisory Opinion Statements

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

Main Motion C-11.07

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 1-32, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Limited X-Ray Machine Operator Practice Standards

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 to humans and animals for diagnostic, therapeutic or research purposes. A limited x-ray machine operator performs radiographic procedures and related techniques 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 radiologic technologist.

An interdisciplinary team of radiologists, 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 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 radiologic technologist in the completion of radiographic procedures.

Limited x-ray machine operators must remain sensitive to the physical and emotional needs of the patient through good communication, patient monitoring and patient care skills. Limited x-ray machine operators use ethical judgment and critical thinking. 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 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.

Upon completing a course of study, many states administer state exams for limited x-ray machine operators. Several states use some or all of the Limited Scope of Practice in Radiography state licensing exam 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.

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 radiologic technologist during radiographic procedures.

3. Determining radiographic technique exposure factors.

4. Evaluating images for positioning, centering, appropriate anatomy and overall image quality.

5. Assisting the licensed independent practitioner or radiologic technologist 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:

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 limited x-ray machine operator:

1. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

2. Documents location of 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:

1. Selects the most appropriate and efficient action plan after reviewing all pertinent data and assessing the patient's abilities and condition.

2. Employs judgment to adapt imaging procedures to improve diagnostic quality.

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 procedure.

Specific Criteria
The limited x-ray machine operator:

1. Demonstrates correct techniques for ensuring patient safety during transfer.

2. Ensures that all procedural requirements are in place to achieve a quality diagnostic examination.

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. Applies principles of sterile technique.
10. Positions patient for anatomic area of interest, respecting patient ability and comfort.
11. Immobilizes patient for procedure.

Specific Criteria
The limited x-ray machine operator:

1. Uses radiation shielding devices.
2. Performs imaging procedures under supervision.
3. Utilizes technical factors according to equipment specifications to minimize radiation exposure to the patient.
4. Administers oxygen as prescribed.

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 images for positioning, appropriate anatomy and overall image quality.

2. Recognizes the need to adjust patient position or technical factors to improve the quality of the examination.

3. Seeks assistance 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:

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 limited x-ray machine operator:

1. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome with assistance from a qualified supervisor.

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:

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.

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
None added.

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 tests with assistance from a qualified supervisor.

4. Participates in radiation protection, patient safety, risk management and quality management activities.

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:

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 limited x-ray machine operator:

1. Performs assessment with assistance from a qualified supervisor.

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:

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.

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 quality assurance tests with assistance from a qualified supervisor.

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 with assistance from a qualified supervisor.

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 qualified supervisor.

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:
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
The limited x-ray machine operator:
1. Develops and implements a modified action plan under the direction of a qualified supervisor.

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:

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
The limited x-ray machine operator:

1. Documents modified action plan under the direction of a qualified supervisor.

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:

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
The limited x-ray machine operator:

1. Performs diagnostic study or treatment under the direction of a qualified supervisor.

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. Recognizes and applies personal and professional strengths.

4. Participates in professional societies and organizations.

Specific Criteria
None added.

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. 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
None added.

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:

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.

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. Participates in continuing education to enhance fundamentals and investigates avenues to continue progress to become a registered technologist.

Limited X-ray Machine Operator Advisory Opinion Statements

Main Motion C-11.08

Amend the Magnetic Resonance Practice Standards

The Practice Standards Council moves to amend the Magnetic Resonance Practice Standards, pages MR 1-34, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Magnetic Resonance Practice Standards

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 Magnetic Resonance Practice Standards

Definition

The practice of magnetic resonance is performed by a segment of health care professionals responsible for the use of radiofrequencies (RFs) within a magnetic field on humans and animals for diagnostic, therapeutic, or research purposes. A magnetic resonance technologist performs magnetic resonance procedures and related techniques, producing 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 radiologists, magnetic resonance technologists and support staff plays a critical role in the delivery of health services, it is the magnetic resonance technologist who performs the magnetic resonance examination that creates the images needed for diagnosis. Magnetic resonance integrates scientific knowledge, technical skills, patient interaction and compassionate care resulting in diagnostic information. A magnetic resonance technologist recognizes conditions essential for successful completion of the procedure and exercises independent professional and ethical judgment.

Magnetic resonance technologists must demonstrate an understanding of human anatomy, physiology, pathology, radiopharmacology and medical terminology.

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

The magnetic resonance technologist is the primary liaison between patients, licensed independent practitioners, and other members of the support team. Magnetic resonance 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, magnetic resonance technologists participate in quality improvement processes and continually assess their professional performance.

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

Education and Certification
Magnetic resonance technologists prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiologic technology. Two-year certificate, associate degree and four-year baccalaureate degree programs exist throughout the United States. Accredited programs must meet specific curricular and educational standards.

Upon completion of a course of study in radiologic technology from an accredited program recognized by the American Registry of Radiologic Technologists, individuals may apply to take the national certification examination. Those who successfully complete the certification examination in radiography may use the credential R.T.(R) following their name; the R.T. signifies registered technologist and the (R) indicates radiography. Those who successfully complete the certification examination in radiation therapy may use the credential R.T.(T) following their name; R.T. signifies registered technologist and the (T) indicates radiation therapy. Those who successfully complete the certification examination in nuclear medicine may use the credential R.T.(N); the R.T. signifies registered technologist and the (N) indicates nuclear medicine.

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

The Nuclear Medicine Technology Certification Board (NMTCB) also is a certifying agency. Once the NMTCB determines an applicant is eligible for the examination, the applicant must take the certification examination within the prescribed time period established by the NMTCB. Those who successfully complete this certification examination may use the credential CNMT, indicating certified nuclear medicine technologist.

Eligibility to take the postprimary examination in magnetic resonance requires registration in radiography, radiation therapy or nuclear medicine technology at the time of examination and documentation of clinical experience in specific procedures. Since Jan. 1, 2001, certificates issued by the NMTCB are recognized as meeting the eligibility requirements for magnetic resonance certification and continued magnetic resonance registration through the ARRT. After successfully completing the magnetic resonance imaging postprimary examination, the credentials R.T.(R)(MR), R.T.(T)(MR) or R.T.(N)(MR) may be used if registered by the ARRT and CNMT, R.T.(MR) ARRT if certified by the NMTCB.

Overview

An interdisciplinary team of radiologists, magnetic resonance 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 magnetic resonance technologist is impractical because clinical activities vary by practice needs and expertise of the magnetic resonance technologist. As magnetic resonance technologists gain

more experience, knowledge and clinical competence, the clinical activities for the magnetic resonance 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 magnetic resonance technologist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

Magnetic Resonance 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 magnetic resonance technologist also includes:

1. Performing procedures or examinations under the order of a licensed independent practitioner for diagnostic interpretation or therapeutic intervention.

2. Applying principles of magnetic resonance safety to minimize risk to patient, self and others.

3. Selecting appropriate pulse sequences with consideration given to established protocols and other factors influencing data acquisition parameters.

4. Assisting the licensed independent practitioner with interventional procedures.

5. Manipulating and reconstructing digital data for display or hard copy records, ensuring proper identification is evident.

6. Maintaining archival storage of digital data as appropriate.

Magnetic Resonance Clinical Performance Standards

Standard One – Assessment

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

1. Screens patient for ferrous and RF-sensitive material before patient enters the magnetic field.

2. Locates and reviews previous examinations for comparison.

3. Receives, relays and documents verbal and/or telephone orders in the patient's chart.

4. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

Magnetic Resonance Clinical Performance Standards

Standard Two – Analysis/Determination

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

1. Selects appropriate image coil.

2. Determines optimum placement of electrocardiogram (ECG) electrodes.

3. Reviews the patient's medical record and licensed independent practitioner's request to determine optimal imaging parameters for clinical indications.

4. Determines the appropriate type of medication to be administered based on the patient's age and weight.

5. Determines patient compliance with pre-examination preparation instructions (e.g., diet, medications).

Magnetic Resonance Clinical Performance Standards

Standard Three – Patient Education

The magnetic resonance 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 magnetic resonance technologist:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The magnetic resonance 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 magnetic resonance technologist:

1. Consults with other departments, such as patient transportation and anesthesia, for patient services.

2. Determines that all procedural requirements are in place to achieve a quality diagnostic examination.

Magnetic Resonance Clinical Performance Standards

Standard Four – Performance

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

1. Provides hearing protection to patient and others.

2. Positions image coil.

3. Performs venipuncture, verifies IV patency and maintains IV access.

4. Monitors the patient's specific absorption rate for variances.

5. Identifies positive cardiac R-wave trigger.

Magnetic Resonance Clinical Performance Standards

Standard Five – Evaluation

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

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

Magnetic Resonance Clinical Performance Standards

Standard Six – Implementation

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

1. Performs routine and specialized postprocessing.

2. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.

Magnetic Resonance Clinical Performance Standards

Standard Seven – Outcomes Measurement

The magnetic resonance technologist reviews and evaluates the outcome of the procedure.

Rationale
To evaluate the quality of care, the magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Clinical Performance Standards

Standard Eight – Documentation

The magnetic resonance 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 magnetic resonance 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
None added.

Magnetic Resonance Quality Performance Standards

Standard One – Assessment

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

1. Maintains controlled access to magnetic field area.

2. Participates in patient safety, risk management and quality management activities.

Magnetic Resonance Quality Performance Standards

Standard Two – Analysis/Determination

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Quality Performance Standards

Standard Three – Education

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Quality Performance Standards

Standard Four – Performance

The magnetic resonance 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 magnetic resonance 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 magnetic resonance technologist:

1. Performs routine archiving status checks.

2. Monitors image production to determine technical acceptability.

Magnetic Resonance Quality Performance Standards

Standard Five – Evaluation

The magnetic resonance 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 magnetic resonance technologist:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. Formulates an action plan.

Specific Criteria
None added.

Magnetic Resonance Quality Performance Standards

Standard Six – Implementation

The magnetic resonance 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 magnetic resonance technologist:

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

2. Implements the quality assurance action plan.

Specific Criteria
None added.

Magnetic Resonance Quality Performance Standards

Standard Seven – Outcomes Measurement

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Quality Performance Standards

Standard Eight – Documentation

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Professional Performance Standards

Standard One – Quality

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Professional Performance Standards

Standard Two – Self-Assessment

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Professional Performance Standards

Standard Three – Education

The magnetic resonance 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 magnetic resonance 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
None added.

Magnetic Resonance Professional Performance Standards

Standard Four – Collaboration and Collegiality

The magnetic resonance 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 magnetic resonance 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
The magnetic resonance technologist:

1. Instructs others on ferrous metal safety.

Magnetic Resonance Professional Performance Standards

Standard Five – Ethics

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Professional Performance Standards

Standard Six – Research and Innovation

The magnetic resonance 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 magnetic resonance 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.

Magnetic Resonance Advisory Opinion Statements

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

Main Motion C-11.09

Amend the Mammography Practice Standards

The Practice Standards Council moves to amend the Mammography Practice Standards, pages M 1-34, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Mammography Practice Standards

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

Definition

The complex nature of breast disease involves multiple imaging modalities with mammography as the primary imaging tool. The practice of mammography is performed by a radiologic technologist (R.T.) who has initially met the qualifications to administer ionizing radiation. The R.T. must subsequently have met the federal mammography training requirements as specified in the Mammography Quality Standards Act of 1992 (MQSA).

Although an interdisciplinary team of medical practitioners and support staff play a critical role in the delivery of breast health services, it is the qualified mammography technologist who creates the mammographic images.

Mammography integrates scientific knowledge, technical skills, patient interaction and compassionate care to obtain viable diagnostic information. The mammography technologist recognizes patient conditions essential for successful completion of the procedure. He or she utilizes independent professional judgment to obtain the resultant diagnostic information when possible and seeks directive from a qualified interpreting physician or lawful institutional policies (or standards of care) to continue or discontinue the exam otherwise.

The mammography technologist independently performs screening and diagnostic mammography exams based on lawful institutional policies and/or practice standards and/or follows the directive of the interpreting physician to assist in the completion of the exam. He or she must demonstrate an understanding of breast anatomy, physiology, pathology and medical terminology.

Mammography technologists must comprehend the complexities of the federal regulations in order to meet the minimum standards for the performance of mammography. He or she must have knowledge of quality assurance policies and quality control (QC) testing for the mammography modality of practice (film-screen or digital mammography). Mammography technologists must maintain a high degree of accuracy in breast positioning, exposure techniques, and subsequent evaluation of imaging parameters to optimize patient imaging and

care while adhering to radiation protection and safety standards.

When involved with diagnostic procedures in breast imaging, mammography technologists must be able to assist the interpreting physician as directed and to prepare, and/or document activities related to medications, in accordance with federal, state and lawful institutional policies.

Mammography technologists are the primary liaison between patients, licensed independent practitioners, and other members of the support team. Mammography technologists must remain sensitive to the physical and emotional needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. They engage in maintaining and updating skills to enhance patient care, education, knowledge and technical competence.

Education and Certification

Mammography technologists initially prepare for their role on the breast health interdisciplinary team by successfully completing an accredited educational program in radiologic technology. Accredited programs must meet specific curricular and educational standards. Two-year certificate, associate degree and four-year baccalaureate degree programs exist throughout the United States.

Upon completion of an accredited radiologic technology course of study the individuals must become licensed by a state and/or certified by the American Registry of Radiologic Technologists (ARRT), a national credentialing organization. Those who successfully complete the ARRT radiography examination may use the credential R.T.(R) following their name; the R.T. signifies registered technologist and the (R) indicates radiography. Licensure states may also mandate passing a radiography examination or may assign state licensure upon submission of a passing grade on the ARRT(R) exam. To maintain certification or state licensure, radiologic technologists must then meet appropriate continuing education requirements.

To advance into the practice of mammography, the R.T.(R) must then meet whichever is more stringent – the initial mammography training requirements mandated by the state in which he or she practices or the federal mandates as defined under the MQSA. In either case the initial training requirements will include both a didactic and clinical component of at least 40 hours. Once completed, the individual is qualified to practice mammography.

Overview

An interdisciplinary team of radiologists, mammography 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 mammography technologist is impractical because clinical activities vary by practice needs and expertise of the cardiovascular interventional technologist. As mammography technologists gain more experience, knowledge and clinical competence, the clinical activities for the mammography 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 mammography technologist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual

thought, judgment and discretion in the performance of the procedure.

Mammography 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 mammography technologist also includes:

1. Performing breast imaging procedures.
2. Determining radiographic technique exposure factors.
3. Performing radiography of pathologic breast specimens.
4. Providing or assisting with physical breast inspection or palpation.
5. Assisting in maintaining medical records, respecting confidentiality and established policy.

6. Understanding and applying patient relations skills.

Mammography Clinical Performance Standards

Standard One – Assessment

The mammography 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 mammography 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 mammography technologist:

1. Documents the location of previous mammograms, and when applicable, asks the patient to sign a release form.

2. Documents the location of breast lumps, scars or moles by placing radiopaque markers on the breast and/or diagramming them on the patient's clinical history sheet.

Mammography Clinical Performance Standards

Standard Two – Analysis/Determination

The mammography 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 mammography 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 mammography technologist:

1. Verifies that deodorants, powders, jewelry or other radiopaque materials that could interfere with the mammogram have been removed from the area of interest.

2. Assesses the need for alternative procedures based on the patient's age, hormonal status, and the presence of surgical implants.

Mammography Clinical Performance Standards

Standard Three – Patient Education

The mammography 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 mammography technologist:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The mammography 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 mammography technologist:

1. Emphasizes the need for mammographic examination according to established guidelines, as well as the value of monthly breast self-examination and regular clinical examination.

2. Provides information on the benefits and limitations of breast self-examination.

3. Responds to questions about radiation dosage, other modalities, possible need for additional projections, the mammography procedure or other breast imaging concerns.

4. Explains the need for adequate compression in achieving a quality mammogram and instructs the patient to indicate if the compression becomes intolerable.

Mammography Clinical Performance Standards

Standard Four – Performance

The mammography 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 mammography 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 mammography technologist:

1. Performs both the craniocaudal and mediolateral oblique projections during a screening mammogram.

2. Places correct annotation of images for projection and laterality where applicable.

3. Applies appropriate radiopaque markers to the breast to mark nipples, scars, lumps, etc.

4. Applies the maximum tolerable amount of compression to the patient's breast to assist in achieving a quality mammogram.

5. Informs the patient of the right to receive a radiologist's report according to the MQSA.

6. Collects and documents tissue samples.

Mammography Clinical Performance Standards

Standard Five – Evaluation

The mammography 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 mammography 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 mammography technologist:

1. Evaluates the mammographic image for positioning, technique, artifacts and compression.

2. Determines the need for repeat or modifications to projections to accomplish expected outcomes.

3. Determines the need for additional projections.

Mammography Clinical Performance Standards

Standard Six – Implementation

The mammography 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 mammography 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 mammography technologist:

1. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.

Mammography Clinical Performance Standards

Standard Seven – Outcomes Measurement

The mammography technologist reviews and evaluates the outcome of the procedure.

Rationale
To evaluate the quality of care, the mammography 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 mammography 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.

Mammography Clinical Performance Standards

Standard Eight – Documentation

The mammography 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 mammography 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
None added.

Mammography Quality Performance Standards

Standard One – Assessment

The mammography 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 mammography 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 mammography technologist:

1. Uses a densitometer and sensitometer to establish a baseline and to measure daily processor performance where processors are used.

2. Establishes a baseline phantom image that meets minimum requirements adhering to state and federal regulations and guidelines.

3. Routinely monitors the mammography machine to ensure safe and accurate performance, according to state and federal regulations and guidelines.

4. Maintains and performs quality control on radiation safety equipment such as aprons, thyroid shields, etc.

Mammography Quality Performance Standards

Standard Two – Analysis/Determination

The mammography 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 mammography 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.

Mammography Quality Performance Standards

Standard Three – Education

The mammography 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 mammography 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 mammography technologist:

1. Provides information on certification or accreditation of mammography facilities to the patient, other health care providers and the general public.

2. Displays certificate(s) of compliance.

Mammography Quality Performance Standards

Standard Four – Performance

The mammography 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 mammography 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 mammography technologist:

1. Consults with medical physicist in performing and documenting the quality assurance tests.

2. Monitors image production to determine technical acceptability.

Mammography Quality Performance Standards

Standard Five – Evaluation

The mammography 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 mammography technologist:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. Formulates an action plan.

Specific Criteria
The mammography technologist:

1. Collaborates with the radiologist and medical physicist on a regular basis to devise a plan to bring equipment or procedures into compliance.

2. Evaluates the required QC tests before mammograms are performed.

Mammography Quality Performance Standards

Standard Six – Implementation

The mammography 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 mammography technologist:

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

2. Implements the quality assurance action plan.

Specific Criteria
The mammography technologist:

1. Proceeds with the mammographic examination only when results from the required QC tests are in compliance.

Mammography Quality Performance Standards

Standard Seven – Outcomes Measurement

The mammography 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 mammography 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
The mammography technologist:

1. Reviews the medical physicist's report and inspection reports to assess the quality of the mammography service.

2. Performs the repeat analysis test at least once per quarter and reviews the results.

Mammography Quality Performance Standards

Standard Eight – Documentation

The mammography 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 mammography 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
The mammography technologist:

1. Makes documentation of quality assurance program, including the QC tests, available for the medical physicist and state and federal inspectors.

Mammography Professional Performance Standards

Standard One – Quality

The mammography 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 mammography 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.

Mammography Professional Performance Standards

Standard Two – Self-Assessment

The mammography 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 mammography 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.

Mammography Professional Performance Standards

Standard Three – Education

The mammography 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 mammography 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
None added.

Mammography Professional Performance Standards

Standard Four – Collaboration and Collegiality

The mammography 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 mammography 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.

Mammography Professional Performance Standards

Standard Five – Ethics

The mammography 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 mammography 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.

Mammography Professional Performance Standards

Standard Six – Research and Innovation

The mammography 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.

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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 Nuclear Medicine Practice Standards

Definition

The practice of nuclear medicine is performed by a segment of health care professionals responsible for the administration of radioactive material to patients for diagnostic, therapeutic or research purposes. Radioactive materials and a gamma camera are used in nuclear medicine to image various organs and body areas to aid in diagnosis, and in some instances treat, various pathological conditions. Although an interdisciplinary team of radiologists, 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 actual patient examination or treatment at the request of and for interpretation by a licensed independent practitioner. Nuclear medicine technology integrates scientific knowledge and technical skills with effective patient interaction to provide quality patient care and useful diagnostic information.

Nuclear medicine technologists must demonstrate an understanding of human anatomy and physiology, chemistry, nuclear physics, mathematics and pharmacology. The nuclear medicine technologist prepares and administers medications in accordance with state and federal regulations.

Nuclear medicine technologists must possess, utilize and maintain a high degree of accuracy and awareness of radiation safety principles and continually perform and assess quality control measures on equipment and procedures.

Nuclear medicine technologists should possess oral and written communication skills to effectively interact with both patients and others in the health care environment. Daily situations require critical thinking and decision-making skills.

Nuclear medicine technologists embrace continuing education for optimal patient care, public education, enhanced knowledge and technical competence.

Education and Certification

Nuclear medicine technologists prepare for their role on the interdisciplinary team by satisfactorily completing an accredited educational program in nuclear medicine. One and two-year certificate, associate degree and four-year baccalaureate degree programs exist throughout the United States.

Accredited programs must meet specific curricular and educational standards. The Joint Review Committee on Educational Programs in Nuclear Medicine Technology is the accrediting agency for nuclear medicine programs recognized by the U.S. Department of Education.

Upon completion of a course of study in nuclear medicine, individuals may apply to take a national certification examination. The American Registry of Radiologic Technologists is a recognized certifying agency for nuclear medicine. Those who successfully complete the certification examination in nuclear medicine may use the credential R.T.(N) following their name; the R.T. signifies registered technologist and the (N) indicates nuclear medicine technologist. To maintain ARRT certification, a level of expertise and awareness of changes and advances in practice, nuclear medicine technologists must complete 24 hours of appropriate continuing education every two years.

The Nuclear Medicine Technology Certification Board (NMTCB) also is a certifying agency. Once the NMTCB determines an applicant is eligible for the examination, the applicant must take the certification examination within a three-month period. Those who successfully complete this certification examination may use the credential CNMT, indicating certified nuclear medicine technologist. CE requirements for NMTCB became effective in January 2006.

Overview

An interdisciplinary team of radiologists, nuclear medicine 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 nuclear medicine technologist is impractical because clinical activities vary by practice needs and expertise of the nuclear medicine technologist. As nuclear medicine technologists gain more experience, knowledge and clinical competence, 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, and for diagnostic interpretation by a licensed independent practitioner.
2. Providing optimal patient care by applying established and accepted protocols.
3. Continually evaluating responsibilities and methods with recommendations for expansion of the profession.
4. 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 for comparison.

2. Receives, relays and documents verbal and/or telephone orders in the patient's chart.

3. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

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:

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 nuclear medicine technologist:

1. Selects detector and collimator to perform scan.

2. Determines appropriate radionuclide dose based on patient's age, weight, medical and physical status.

3. Determines optimum placement of ECG electrodes.

4. Reviews the patient's medical record and the examination request to determine optimal scan parameters for clinical indications.

5. 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:

1. 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.

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 nuclear medicine technologist:

1. Instructs patient regarding exam preparation prior to dosage and radiation risks to others following dosage.

2. Provides information regarding risks and benefits of radiation.

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 radioactive materials and medications.

2. Performs venipuncture, verifies IV patency and maintains IV access.

3. Utilizes shielding devices.

4. Monitors imaging production to determine variance from established quality standards.

5. Identifies positive cardiac R-wave trigger.

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 images to determine if additional scan will enhance the diagnostic value of the procedure.

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:

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 nuclear medicine technologist:

1. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.

2. Assesses images for technical quality and makes technical modifications to the data presentations.

3. Performs additional views.

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:

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.

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:

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 nuclear medicine technologist:

1. Maintains records about the use of radioactive materials.

2. Documents administered radionuclide activity and volume.

3. Documents radiation exposure.

4. Documents justification for additional views.

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:

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 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.

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:

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 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:

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.

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:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. 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:

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

2. 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:

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.

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:

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
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:

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
The nuclear medicine technologist:

1. Performs procedures in accordance with the Nuclear Regulatory Commission (NRC) or in agreement with state's 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:

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
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:

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
The nuclear medicine technologist:

1. Instructs others in postprocedural 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:

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.

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:

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.

Nuclear Medicine Advisory Opinion Statements

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

Main Motion C-11.11

Amend the Radiography Practice Standards

The Practice Standards Council moves to amend the Radiography Practice Standards, pages R 1-33, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Radiography Practice Standards

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 a segment of health care professionals responsible for the administration of ionizing radiation to humans and animals for diagnostic, therapeutic or research purposes. A radiographer performs radiographic procedures and related techniques, producing images 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 radiologists, radiographers and support staff plays a critical role in the delivery of health services, it is the radiographer who performs the radiographic examination that creates the images needed for diagnosis. Radiography integrates scientific knowledge, technical skills, patient interaction and compassionate care resulting in diagnostic information. A radiographer recognizes 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 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, 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 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. Two-year certificate, associate degree and four-year baccalaureate degree programs exist throughout the United States. Accredited programs must meet specific curricular and educational standards.

Upon completion of a course of study in radiologic technology from an accredited program recognized by the American Registry of Radiologic Technologists, individuals may apply to take the national certification examination. Those who successfully complete the certification examination in radiography may use the credential R.T.(R) following their name; the R.T. signifies registered technologist and the (R) indicates radiography. To maintain ARRT certification, radiographers must complete appropriate continuing education requirements in order 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 procedures.
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. Performing peripherally inserted central catheter placement where state statute(s) and/or lawful institutional policy permits.
6. 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. Receives, relays and documents verbal and/or telephone orders in the patient's chart where state statute and/or lawful institutional policy permit.

4. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

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:

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 radiographer:

1. Evaluates lab values prior to administering medication and beginning interventional procedures.

2. Determines type and dose of contrast agent to be administered, based on the patient's age, weight and medical/physical status.

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:

1. 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.

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 radiographer:

1. Consults with other departments, such as patient transportation and anesthesia, 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. Performs venipuncture, IV patency and maintenance procedures.

2. Uses radiation shielding devices.

3. Utilizes technical factors according to equipment specifications to minimize radiation exposure to the patient.

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, appropriate anatomy and overall image quality.

2. 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:

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 radiographer:

1. Performs additional views.

2. Documents justification for additional views.

3. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.

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:

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.

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:

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 radiographer:
1. Documents fluoroscopy time.

2. Documents radiation exposure parameters.

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:
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 radiographer:
1. Maintains controlled access to restricted area during radiation exposure.

2. Follows federal and state guidelines to minimize radiation exposure levels.

3. Maintains and performs quality control on radiation safety equipment such as aprons, thyroid shields, etc.

4. Develops and maintains a technique chart for all equipment.

5. Participates in radiation protection, patient safety, risk management and quality management activities.

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:

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.

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:

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.

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 in performing and documenting 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:

1. Validates quality assurance testing conditions and results.
2. Evaluates quality assurance results.
3. 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:

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

2. 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:

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.

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:

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.

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:

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.

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:

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
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:

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.

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:

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.

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:

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.

Radiography Advisory Opinion Statements

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

Main Motion C-11.12

Amend the Radiologist Assistant Practice Standards

The Practice Standards Council moves to amend the Radiologist Assistant Practice Standards, pages RA 1-34, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Radiologist Assistant Practice Standards

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 Radiologist Assistant Practice Standards

Definition
A radiologist assistant is an advanced-practice radiographer who practices under the supervision of a radiologist and enhances patient care in radiology services. As a member of the radiologist-directed team, the radiologist assistant exercises independent professional judgment in the performance of patient assessment, patient management and procedures in medical imaging and interventional radiology.

Education and Certification
The radiologist assistant is a health care professional prepared to practice in the field of medical imaging as a mid-level provider, with a minimum of five years academic preparation, clinical preceptorship and clinical experience. Radiologist assistants are radiographers who have completed didactic and clinical education in a radiologist assistant program recognized by a mechanism acceptable to the American Registry of Radiologic Technologists. The individual must have earned a baccalaureate degree, post-baccalaureate certificate or graduate degree from an academic program encompassing a nationally recognized radiologist assistant curriculum that includes a radiologist-directed clinical preceptorship. Advisory committees of radiologist assistant programs should include radiologist representation.

Academic curriculum and clinical preceptorship prepares the graduate to:

A. Assess, monitor and manage patient physiologic and psychologic status.
B. Perform invasive and noninvasive imaging procedures as delegated by the radiologist who is licensed to practice and has privileges for the procedure being performed by the radiologist assistant.
C. Obtain images necessary for diagnosis and provide initial observations to the delegating radiologist.
D. Emphasize patient safety and verify procedure appropriateness by analyzing and incorporating evidenced-based practices for optimal patient care.
E. Advocate for patient and personnel radiation safety by employing the ALARA principle to minimize patient and occupational radiation dose.
F. Participate in quality improvement activities within the radiology practice.

G. Assist with data collection and review for clinical trials or other research.

Upon completion of a radiologist assistant program recognized by the ARRT, individuals may apply to take the ARRT national certification examination. Those who successfully complete the certification examination may practice as a registered radiologist assistant (R.R.A.) and identify themselves as such. In accordance with ARRT protocol, the R.R.A. may then add these credentials following his or her name, e.g., Jack Smith, R.R.A., R.T.(R).

To maintain certification, the R.R.A. must complete 50 continuing education credits per biennium, as defined by the ARRT, to sustain expertise and awareness of changes and advances in practice.

Overview

An interdisciplinary team of radiologists, radiologist assistants, 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 radiologist assistant is impractical because clinical activities vary by practice needs and expertise of the radiologist assistant. As radiologist assistants gain more experience, knowledge and clinical competence, the clinical activities for the radiologist assistant may evolve. The clinical activities are delegated by the supervising radiologist in accordance with state statute or regulations and lawful institutional policies.
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 radiologist assistant should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure. *In addition, because a radiologist assistant holds radiographer credentials, specific criteria for radiographers are incorporated into these standards by reference*. Both the Radiologist Assistant and Radiography sections of the Practice Standards for Medical Imaging and Radiation Therapy should be consulted when seeking practice information for the radiologist assistant practice.

Radiologist Assistant Scope of Practice

Performance of clinical activities by the radiologist assistant is defined by educational preparation, documented clinical competence with radiologist supervision and radiologist delegation in accordance with state laws, regulations and lawful institutional policy.

Preprocedure responsibilities include, but are not limited to, completing patient history and physical, determining procedure appropriateness and participating in informed patient consent. The radiologist assistant reviews variances identified through preprocedural evaluation that may influence the expected outcome with the delegating radiologist prior to the procedure.

The radiologist assistant performs or assists the radiologist with noninvasive and invasive radiology procedures using image guidance as appropriate. The radiologist assistant participates in the preparation, administration and documentation of medications. The radiologist assistant assesses, monitors and manages patient status, including patients under moderate sedation.

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.

Radiologist assistants act as liaisons between patients, radiographers, radiologists and other members of the health care team. Radiologist assistants remain sensitive to the physical, cultural and emotional needs of patients through good communication, comprehensive patient assessment, continuous patient monitoring and advanced patient care skills. Radiologist assistants use independent, professional, ethical judgment and critical thinking to safely perform imaging procedures. Radiologist assistants commit to continued professional development to enhance patient care, public education, knowledge and technical competence.

Radiologist Assistant Clinical Performance Standards

Standard One – Assessment

The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Performs and documents a radiology-focused physical examination, an analysis of data (e.g., signs and symptoms, laboratory values, vital signs, and significant abnormalities) and reports findings to the delegating radiologist.

2. Observes and assesses a patient who has received moderate sedation.

3. Assesses the patient's level of anxiety and pain and informs the delegating radiologist.

4. Interviews patient to obtain, verify and update medical history.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Two – Analysis/Determination

The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Determines patient compliance, if needed, with pre-examination preparation instructions (e.g., diet, medications).

2. Reviews the patient's medical record and the licensed independent practitioner's request to determine optimal imaging procedure for clinical indications.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Three – Patient Education

The radiologist assistant 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 radiologist assistant:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The radiologist assistant 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 radiologist assistant:

1. Explains procedure to the patient or significant others, including a description of risks, benefits, alternatives and follow-up.

2. Provides prescribed postcare instructions as ordered by the delegating radiologist.

3. Obtains informed consent.

4. Provides information regarding risks and benefits of radiation.

5. Refers questions about diagnosis, treatment or prognosis to the delegating radiologist.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Four – Performance

The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Administers moderate sedation and observes and assesses the patient who has received moderate sedation.

2. Recognizes and responds to medical emergencies, activates emergency response systems and provides advanced life support intervention.

3. Performs invasive and noninvasive procedures as delegated by the radiologist.

4. Administers medications as approved by the delegating radiologist.

5. Monitors patient's physical condition during the procedure and responds to changes in patient vital signs, hemodynamics and level of consciousness.

6. Collects and documents tissue samples.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Five – Evaluation

The radiologist assistant 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 radiologist assistant:

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.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Six – Implementation

The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Communicates rationale for revisions to the radiologist.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Seven – Outcomes Measurement

The radiologist assistant reviews and evaluates the outcome of the procedure.

Rationale
To evaluate the quality of care, the radiologist assistant 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 radiologist assistant:

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
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.

See also Radiography Practice Standards.

Radiologist Assistant Clinical Performance Standards

Standard Eight – Documentation

The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Provides patient discharge, procedure and post-care instructions summary for review and co-signature by the delegating radiologist.

2. Documents use of moderate sedation.

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.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard One – Assessment

The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Participates in radiation protection, patient safety, risk management and quality management activities.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Two – Analysis/Determination
The radiologist assistant 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 radiologist assistant:

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.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Three – Education
The radiologist assistant 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 radiologist assistant:

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

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Four – Performance
The radiologist assistant 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 radiologist assistant:

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 radiologist assistant:

1. Participates in quality improvement activities within the radiology practice (e.g., quality of care, patient flow, reject-repeat analysis, patient satisfaction).

2. Provides a safe environment for patients and staff.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Five – Evaluation
The radiologist assistant 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 radiologist assistant:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. Formulates an action plan.

Specific Criteria
The radiologist assistant:

1. Evaluates radiation safety, patient safety, risk management and quality management activities.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Six – Implementation
The radiologist assistant 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 radiologist assistant:

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

2. Implements the quality assurance action plan.

Specific Criteria
The radiologist assistant:

1. Implements radiation safety, patient safety, risk management and quality management decisions.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Seven – Outcomes Measurement
The radiologist assistant 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 radiologist assistant:

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.

See also Radiography Practice Standards.

Radiologist Assistant Quality Performance Standards

Standard Eight – Documentation
The radiologist assistant 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 radiologist assistant:

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.

See also Radiography Practice Standards.

Radiologist Assistant Professional Performance Standards

Standard One – Quality
The radiologist assistant 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 radiologist assistant:
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.

See also Radiography Practice Standards.

Radiologist Assistant Professional Performance Standards

Standard Two – Self Assessment
The radiologist assistant 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 radiologist assistant:

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.

See also Radiography Practice Standards.

Radiologist Assistant Professional Performance Standards

Standard Three – Education
The radiologist assistant 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 radiologist assistant:

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
None added.

See also Radiography Practice Standards.

Radiologist Assistant Professional Performance Standards

Standard Four – Collaboration and Collegiality
The radiologist assistant 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 radiologist assistant:

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
The radiologist assistant:

1. Collaborates with others to promote continuity of patient care.

2. Promotes understanding of procedures through in-service for other health care providers.

See also Radiography Practice Standards.

Radiologist Assistant Professional Performance Standards

Standard Five – Ethics
The radiologist assistant 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 radiologist assistant:

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
The radiologist assistant:

1. Secures all orders and prescriptions as required.
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.
4. Performs procedures in accordance with lawful institutional credentialing restrictions.

See also Radiography Practice Standards.

Radiologist Assistant Professional Performance Standards

Standard Six – Research and Innovation
The radiologist assistant 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 radiologist assistant:
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 radiologist assistant:
1. Collects data for clinical trials or other research.

See also Radiography Practice Standards.

Radiologist Assistant Advisory Opinion Statements

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.

References

ARRT R.R.A. Entry Level Clinical Activities (ELCA) 2009
ARRT R.R.A. Continuing Education Requirements
ASRT Radiologist Assistant Curriculum

Main Motion C-11.13

Amend the Radiation Therapy Practice Standards

The Practice Standards Council moves to amend the Radiation Therapy Practice Standards, pages RT 1-34, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Radiation Therapy Practice Standards

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 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 Radiation Therapy Practice Standards

Definition

The practice of radiation therapy is performed by health care professionals responsible for the administration of ionizing radiation for the purpose of treating diseases, primarily cancer.

The complex nature of cancer frequently requires the use of multiple treatment specialties. Radiation therapy is one such specialty. It requires an interdisciplinary team of radiation oncologists, radiation therapists, medical radiation physicists, medical dosimetrists and nurses. It is typically the radiation therapist who administers the radiation to the patient throughout the course of treatment. Radiation therapy integrates scientific knowledge, technical competency and patient interaction skills to deliver safe and accurate treatment with compassion.

Radiation therapists must demonstrate an understanding of anatomy, physiology, pathology and medical terminology. In addition, comprehension of oncology, radiobiology, radiation physics, radiation oncology techniques, radiation safety and the psychosocial aspects of cancer are required.

Radiation therapists must maintain a high degree of accuracy in positioning and treatment techniques. They must possess, utilize and maintain knowledge about radiation protection and safety. Radiation therapists assist the radiation oncologist in localizing the treatment area, participate in treatment planning and deliver high doses of ionizing radiation as prescribed by the radiation oncologist.

Radiation therapists are the primary liaison between patients and other members of the radiation oncology team. They also provide a link to other health care providers, such as social workers and dietitians. Radiation therapists must remain sensitive to the physical and emotional needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. Radiation therapy often involves daily treatments extending over several weeks utilizing highly sophisticated equipment. It requires a great deal of initial planning as well as constant patient care and monitoring. As members of the health care team, radiation therapists participate in quality improvement processes and continually assess their professional performance.

Radiation therapists 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

Radiation therapists prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiation therapy and attaining appropriate primary certification by American Registry of Radiologic Technologists. Those passing the radiation therapy examination use the credential R.T.(T).
To maintain ARRT certification, radiation therapists 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 radiation oncologists, radiation therapists, dosimetrists, medical physicists and other support staff plays a critical role in the delivery of health services as new modalities emerge and the need for radiation therapy treatment procedures evolve. A comprehensive procedure list for the radiation therapist is impractical because clinical activities vary by practice needs and expertise of the radiation therapist. As radiation therapists gain more experience, knowledge and clinical competence, the clinical activities for the radiation therapist 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 radiation therapist should, within the boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

Radiation Therapist 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 radiation therapist also includes:

1. Delivering radiation therapy treatments as prescribed by a radiation oncologist.

2. Performing simulation, treatment planning procedures and dosimetric calculations as prescribed by a radiation oncologist.

3. Utilizing imaging technologies for the explicit purpose of simulation, treatment planning and treatment delivery as prescribed by a radiation oncologist.

4. Detecting and reporting significant changes in patients' conditions and determining when to withhold treatment until the physician is consulted.

5. Monitoring doses to normal tissues within the irradiated volume to ensure tolerance levels are not exceeded.

6. Constructing/preparing immobilization, beam directional and beam modification devices.

7. Participating in brachytherapy procedures.

Radiation Therapy Clinical Performance Standards

Standard One – Assessment

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Assesses the patient's risk for allergic reaction to medication prior to administration.

2. Assesses the patient's need for information and reassurance.

3. Monitors side effects and reactions to treatment.

4. Reviews treatment record prior to treatment or simulation.

5. Monitors doses to normal tissues.

6. Recognizes the patient's need for referral to other care providers such as a social worker, nurse or dietitian.

7. Monitors and assesses patients throughout the treatment course and follow-up visits.

8. Reviews treatment protocol criteria and assesses conditions affecting treatment delivery.

Radiation Therapy Clinical Performance Standards

Standard Two – Analysis/Determination

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Participates in decisions about appropriate simulation techniques and treatment positions.

2. Reviews patient treatment records prior to each treatment for prescription or treatment procedure changes.

3. Reviews doses daily to ensure that treatment does not exceed prescribed dose, normal tissue tolerance or treatment protocol constraints.

4. Reviews portal images prior to treatment.

5. Determines when to contact the licensed independent practitioner regarding patient side effects or questions.

6. Determines when to withhold treatment until a licensed independent practitioner is contacted.

Radiation Therapy Clinical Performance Standards

Standard Three – Patient Education

The radiation therapist 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 radiation therapist:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The radiation therapist 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 radiation therapist:

1. Provides information regarding risks and benefits of radiation.

2. Instructs patient in the maintenance of treatment field markings.

3. Provides information and instruction on proper skin care, diet and self-care procedures.

4. Anticipates a patient's need for information and provides it throughout the treatment course.

Radiation Therapy Clinical Performance Standards

Standard Four – Performance

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Fabricates individualized immobilization, custom blocks and other beam-modifying devices.

2. Assists the radiation oncologist in determining the optimum treatment field to cover the target volume.

3. Prepares and positions patient for simulation and treatment.

4. Achieves precision patient alignment utilizing imaging and external markings.

5. Creates and manages simulation and portal images.

6. Obtains radiation oncologist's approval of simulation images prior to initiation of treatment.

7. Plans and delivers the treatment as directed and prescribed by the radiation oncologist.

8. Calculates monitor units and treatment times.

9. Performs pretreatment imaging.

10. Monitors the patient visually and aurally during treatment.

11. Prepares or assists in preparing brachytherapy sources and equipment.

12. Monitors the treatment console during treatment.

13. Utilizes knowledge of biological effects of ionizing radiation on tissue to minimize radiation dose to normal tissues.

Radiation Therapy Clinical Performance Standards

Standard Five – Evaluation

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Checks treatment calculations.

2. Verifies the accuracy of the patient setup prior to treatment delivery.

3. Compares pretreatment and portal images to simulation images using anatomical landmarks or fiducial markers.

4. Verifies treatment console readouts and settings prior to initiating treatment and upon termination of treatment.

5. Evaluates the patient daily for any untoward effects, reactions and therapeutic responses.

Radiation Therapy Clinical Performance Standards

Standard Six – Implementation

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Reports deviations from the standard or planned treatment.

2. Initiates treatment field changes indicated on simulation or portal images.

3. Initiates treatment field changes based on pretreatment imaging.

4. Develops additional treatment plans to achieve an adequate dose distribution.

5. Adapts procedures to equipment limitations and patient needs.

6. Works with radiation oncologists, physicists and dosimetrists to compensate for treatment inaccuracies.

Radiation Therapy Clinical Performance Standards

Standard Seven – Outcomes Measurement

The radiation therapist reviews and evaluates the outcome of the procedure.

Rationale
To evaluate the quality of care, the radiation therapist 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 radiation therapist:

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
The radiation therapist:

1. Monitors patient status during procedures, throughout the treatment course and for follow-up care.

Radiation Therapy Clinical Performance Standards

Standard Eight – Documentation

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Documents radiation exposure parameters.

2. Maintains imaging and treatment records according to institutional policy.

Radiation Therapy Quality Performance Standards

Standard One – Assessment

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Inspects ancillary devices prior to use.

2. Monitors treatment unit operation during use.

3. Observes the environment for any potential radiation hazards.

4. Participates in radiation protection, patient safety, risk management and quality management activities.

Radiation Therapy Quality Performance Standards

Standard Two – Analysis/Determination

The radiation therapist 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 radiation therapist:

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 radiation therapist:

1. Verifies the mathematical accuracy of the prescription and the daily treatment summary.

2. Reviews treatment record and verifies calculations before treatment delivery.

Radiation Therapy Quality Performance Standards

Standard Three – Education

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

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 radiation therapist:

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 radiation therapist:

1. Informs the patient and significant others about appropriate and essential uses of radiation and corrects misconceptions.

2. Instructs other health care providers about radiation protection procedures.

3. Assists in development and production of educational materials for patients and the general public.

Radiation Therapy Quality Performance Standards

Standard Four – Performance

The radiation therapist performs quality assurance activities.

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 radiation therapist:

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 radiation therapist:

1. Adheres to radiation safety rules and standards.

2. Makes the decision to discontinue patient treatment until equipment is operating properly.

3. Verifies that only the patient is in the treatment room prior to initiating treatment.

4. Demonstrates safe handling, storing and disposal of brachytherapy sources.

Radiation Therapy Quality Performance Standards

Standard Five – Evaluation

The radiation therapist 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 radiation therapist:

1. Validates quality assurance testing conditions and results.

2. Evaluates quality assurance results.

3. Formulates an action plan.

Specific Criteria
The radiation therapist:

1. Reviews portal and pretreatment images for accuracy.

2. Performs treatment chart checks.

3. Reviews treatment deviations and determines causes.

Radiation Therapy Quality Performance Standards

Standard Six – Implementation

The radiation therapist 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 radiation therapist:

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

2. Implements the quality assurance action plan.

Specific Criteria
The radiation therapist:

1. Formulates recommendations for process improvements to minimize treatment deviations.

Radiation Therapy Quality Performance Standards

Standard Seven – Outcomes Measurement

The radiation therapist 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 radiation therapist:

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
The radiation therapist:

1. Reviews and evaluates quality assurance tools and instruments periodically for effectiveness.

Radiation Therapy Quality Performance Standards

Standard Eight – Documentation

The radiation therapist 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 radiation therapist:

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
The radiation therapist:

1. Reports any treatment deviations.

Radiation Therapy Professional Performance Standards

Standard One – Quality

The radiation therapist 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 radiation therapist:

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
The radiation therapist:

1. Advocates the need for two credentialed radiation therapists to be available per treatment unit for treatment delivery.

Radiation Therapy Professional Performance Standards

Standard Two – Self-Assessment

The radiation therapist 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 radiation therapist:

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.

Radiation Therapy Professional Performance Standards

Standard Three – Education

The radiation therapist 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 radiation therapist:

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
None added.

Radiation Therapy Professional Performance Standards

Standard Four – Collaboration and Collegiality

The radiation therapist 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 radiation therapist:

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
The radiation therapist:

1. Interacts with other members of the radiation oncology team.

2. Instructs others in postprocedural radiation safety.

Radiation Therapy Professional Performance Standards

Standard Five – Ethics

The radiation therapist 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 radiation therapist:

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.

Radiation Therapy Professional Performance Standards

Standard Six – Research and Innovation

The radiation therapist 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 radiation therapist:

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 with colleagues through publication, presentation and collaboration.

5. Adopts new best practices.

6. Pursues lifelong learning.

Specific Criteria
None added.

Radiation Therapy Advisory Opinion Statements

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

Main Motion C-11.14

Amend the Sonography Practice Standards

The Practice Standards Council moves to amend the Sonography Practice Standards, pages DS 1-34, by:

- Substitution.

The Practice Standards for Medical Imaging and Radiation Therapy

Sonography Practice Standards

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 Sonography Practice Standards

Definition

The practice of sonography is performed by a segment of health care professionals responsible for the administration of high frequency sound waves and other diagnostic techniques for medical purposes at the request of and for interpretation by a licensed independent practitioner. This profession is a health care service requiring highly skilled and competent professionals who are an integral part of the health care team.

The complex nature of disease processes involves multiple imaging modalities. Although an interdisciplinary team plays a critical role in the delivery of health services, it is the sonographer who performs the ultrasound examination that creates the images needed for diagnosis. Sonography integrates scientific knowledge, technical skills, patient interaction and compassionate care resulting in diagnostic information. A sonographer recognizes patient conditions essential for successful completion of the procedure and exercises independent professional and ethical judgment.

The sonographer must demonstrate an understanding of human anatomy, physiology, pathology and medical terminology. Additionally, the sonographer is competent in production, use, recognition and analysis of ultrasound images and patterns used for patient diagnosis and treatment.

Sonographers are the primary liaison between patients, licensed independent practitioners, and other members of the support team. Sonographers 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, sonographers participate in quality improvement processes and continually assess their professional performance.

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

Beyond patient care and ultrasound imaging, the professional role of the sonographer also may include supervision, management, curriculum development, instruction, technical support for

equipment manufacturers or research. Within this health care service, there is a diverse range of ultrasound imaging specialties. These specialties are:

- Diagnostic medical sonography – abdominal, neurologic, obstetrical/gynecologic and ophthalmic.
- Cardiac sonography – adult and pediatric echocardiography.
- Vascular technology – vascular and related organs.

Education and Certification

Sonographers prepare for their role on the interdisciplinary team by successfully completing an accredited educational program in radiologic technology or sonography. Two-year certificate, associate degree and four-year baccalaureate degree programs exist throughout the United States. Accredited programs must meet specific curricular and educational standards.
Upon completion of a course of study from an accredited program recognized by the American Registry of Radiologic Technologists, individuals may apply to take the national certification examination. The American Registry of Radiologic Technologists is a recognized certifying agency for ultrasound. Those who successfully complete the certification examination in sonography may use the credential R.T.(S) following their name; the R.T. signifies registered technologist and the (S) indicates sonography.

Eligibility to take the postprimary examination in sonography requires registration in radiography, radiation therapy or nuclear medicine technology at the time of examination and documentation of clinical experience in specific procedures. Those who successfully complete this examination may use the credentials R.T.(R)(S) – registered technologist, radiography, sonography; R.T.(T)(S) – registered technologist, therapy, sonography; or R.T.(N)(S) – registered technologist, nuclear medicine, sonography. To maintain ARRT certification, a level of expertise and awareness of changes and advances in practice, sonographers must complete 24 hours of appropriate continuing education every two years.

The American Registry of Diagnostic Medical Sonographers is another certifying agency. Those who successfully complete an examination in a specific area may use the following credentials:

- Diagnostic medical sonography – RDMS (registered diagnostic medical sonographer).
- Cardiac sonography – RDCS (registered diagnostic cardiac sonographer).
- Vascular technology – RVT (registered vascular technologist).

Sonographers and vascular technologists credentialed by ARDMS must obtain continuing medical education or successfully complete an additional ARDMS credentialing examination to maintain active status with the ARDMS.

Overview

An interdisciplinary team of radiologists, sonographers, 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 sonographer is impractical because clinical activities vary by practice needs and expertise of the sonographer. As sonographers gain more experience, knowledge and clinical competence, the clinical activities for the sonographer 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 sonographer should, within the

boundaries of all applicable legal requirements and restrictions, exercise individual thought, judgment and discretion in the performance of the procedure.

Sonographer 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 sonographer also includes:

1. Performing diagnostic ultrasound procedures or examinations upon the order of, or for diagnostic interpretation by a licensed independent practitioner.
2. Determining ultrasonic frequencies and appropriate transducers for the anatomic area of interest.
3. Assisting a licensed independent practitioner with interventional procedures such as needle localizations, aspirations, biopsies and amniocentesis.
4. Assisting in maintaining records, respecting confidentiality and established policy.

Sonography Clinical Performance Standards

Standard One – Assessment

The sonographer 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 sonographer:

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 sonographer:

1. Locates and reviews previous examinations for comparison.

2. Receives, relays, and documents verbal and/or telephone orders in the patient's chart where state statute and/or lawful institutional policy permit.

3. Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry and hearing aids.

Sonography Clinical Performance Standards

Standard Two – Analysis/Determination

The sonographer 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 sonographer:

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 sonographer:

1. Selects appropriate ultrasound system and scanning techniques based on the age and size of the patient and the objective of the examination to optimize the procedure and minimize patient exposure to acoustic energy.

2. Verifies current patient history and physical examination are available.

3. Documents or assists in documenting patient medical history related to the procedure.

Sonography Clinical Performance Standards

Standard Three – Patient Education

The sonographer 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 sonographer:

1. Verifies that the patient has consented to the procedure and fully understands its risks, benefits, alternatives and follow-up. The sonographer 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 sonographer:

1. Consults with other departments, such as patient transportation and anesthesia, for patient services.

2. Instructs patients regarding preparation prior to imaging procedures, including providing information about oral or bowel preparation and allergy preparation.

Sonography Clinical Performance Standards

Standard Four – Performance

The sonographer 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 sonographer:

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 sonographer:

1. Performs venipuncture and maintains IV patency.

2. Demonstrates knowledge of biological effects of interaction of ultrasound and tissue and minimizes patient exposure to acoustic energy.

3. Recognizes sonographic appearance of normal and abnormal tissue structures; adjusts and uses scanning techniques and ultrasound modes to optimize the image quality and diagnostic information.

4. Collects and documents tissue samples.

5. Identifies positive cardiac R-wave trigger.

Sonography Clinical Performance Standards

Standard Five – Evaluation

The sonographer 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 sonographer:

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 sonographer:

1. Provides the interpreting physician with initial impressions.

Sonography Clinical Performance Standards

Standard Six – Implementation

The sonographer 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 sonographer:

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 sonographer:

1. Initiates additional scanning techniques for further investigation of area of interest.

2. Collects additional images and patient data requested by interpreting physician.

3. Performs routine and specialized postprocessing.

4. Adjusts imaging parameters, patient procedure or computer-generated information to improve the outcome.

Sonography Clinical Performance Standards

Standard Seven – Outcomes Measurement

The sonographer reviews and evaluates the outcome of the procedure.

Rationale
To evaluate the quality of care, the sonographer 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 sonographer:

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.

Sonography Clinical Performance Standards

Standard Eight – Documentation

The sonographer 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 sonographer:

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 sonographer:

1. Documents initial impressions.

Sonography Quality Performance Standards

Standard One – Assessment

The sonographer 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 sonographer:

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 sonographer:

5. Participates in patient safety, risk management and quality management activities.

Sonography Quality Performance Standards

Standard Two – Analysis/Determination

The sonographer 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 sonographer:

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.

Sonography Quality Performance Standards

Standard Three – Education

The sonographer 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 sonographer:

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.

Sonography Quality Performance Standards

Standard Four – Performance

The sonographer 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 sonographer:

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 sonographer:

1. Monitors image production to determine technical acceptability.

2. Performs routine archiving status checks.

Sonography Quality Performance Standards

Standard Five – Evaluation

The sonographer 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 sonographer:

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

Specific Criteria
None added.

Sonography Quality Performance Standards

Standard Six – Implementation

The sonographer 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 sonographer:

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

2. Implements the quality assurance action plan.

Specific Criteria
None added.

Sonography Quality Performance Standards

Standard Seven – Outcomes Measurement

The sonographer 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 sonographer:

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.

Sonography Quality Performance Standards

Standard Eight – Documentation

The sonographer 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 sonographer:

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.

Sonography Professional Performance Standards

Standard One – Quality

The sonographer 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 sonographer:

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
The sonographer:

1. Strives to minimize patient exposure to acoustic energy.

Sonography Professional Performance Standards

Standard Two – Self-Assessment

The sonographer 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 sonographer:

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.

Sonography Professional Performance Standards

Standard Three – Education

The sonographer 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 sonographer:

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
None added.

Sonography Professional Performance Standards

Standard Four – Collaboration and Collegiality

The sonographer 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 sonographer:

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.

Sonography Professional Performance Standards

Standard Five – Ethics

The sonographer 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 sonographer:

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
The sonographer:

1. Avoids participation in sonography procedures for entertainment or nonmedical purposes.

Sonography Professional Performance Standards

Standard Six – Research and Innovation

The sonographer 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 sonographer:

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.

Sonography Advisory Opinion Statements

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

Main Motion C-11.15

Amend the Practice Standards Glossary

The Practice Standards Council moves to amend the Practice Standards Glossary, pages Glossary 2-4, by:

- Substitution.

Motion: The Commission moves to divide the question and vote separately on the definition of "As low as reasonably achievable (ALARA)" and "Physicist (radiation physicist, medical radiation physicist)."

Motion C-11.15A: Adoption of the proposed Glossary with the exceptions of the definitions of "As low as reasonably achievable (ALARA)" and "Physicist (radiation physicist, medical radiation physicist)."

Motion C-11.15B: Adoption of the definition of "As low as reasonably achievable (ALARA)."
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.

Motion C-11.15C: Adoption of the definition of "Physicist (radiation physicist, medical radiation physicist)."

Physicist (radiation physicist, medical radiation physicist) – Individual responsible for developing and directing quality control programs for equipment and procedures

Motion: The Commission moves to refer Motion C-11.15C back to the Practice Standards Council.

Main Motion C-11.16

Rescind the Position Statement "Qualifications for Performing Bone Densitometry"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Bone Densitometry."

> **Qualifications for Performing Bone Densitometry**
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in bone densitometry by the American Registry of Radiologic Technologists (ARRT), the International Society for Clinical Densitometry (ISCD) or equivalent perform all bone densitometry procedures.

Main Motion C-11.17

Rescind the Position Statement "Qualifications for Performing Cardiac-Interventional (CI), Cardiovascular-Interventional (CV) and Vascular-Interventional (VI) Radiography"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Cardiac-Interventional (CI), Cardiovascular-Interventional (CV) and Vascular-Interventional (VI) Radiography."

> **Qualifications for Performing Cardiac-Interventional (CI), Cardiovascular-Interventional (CV) and Vascular-Interventional (VI) Radiography**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists credentialed in cardiac-interventional (CI), cardiovascular-interventional (CV) or vascular-interventional (VI) radiography by the American Registry of Radiologic Technologists (ARRT) or radiologic technologists credentialed as registered cardiovascular invasive specialists (RCIS) by Cardiovascular Credentialing International (CCI) perform all cardiovascular-interventional procedures.

Main Motion C-11.18

Rescind the Position Statement "Qualifications for Performing Computed Tomography (CT)"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Computed Tomography (CT)."

> **Qualifications for Performing Computed Tomography (CT)**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in computed tomography (CT) by the American Registry of Radiologic Technologists (ARRT) or equivalent perform all diagnostic and interventional computed tomography procedures.

Main Motion C-11.19

Rescind the Position Statement "Qualifications for Performing Image-guided Procedures"

The Commission moves to rescind the position statement titled "Qualifications for Performing Image-guided Procedures."

> **Qualifications for Performing Image-guided Procedures**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified by the American Registry of Radiologic Technologists (ARRT), American Registry for Diagnostic Medical Sonography (ARDMS), Cardiovascular Credentialing International (CCI) or Nuclear Medicine Technology Certification Board (NMTCB) perform medical imaging that is used to guide procedures.

Main Motion C-11.20

Rescind the Position Statement "Qualifications for Performing Magnetic Resonance (MR)"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Magnetic Resonance (MR)."

> **Qualifications for Performing Magnetic Resonance (MR)**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in magnetic resonance (MR) by the American Registry of Radiologic Technologists (ARRT) or equivalent perform all diagnostic and interventional magnetic resonance procedures.

Main Motion C-11.21

Rescind the Position Statement "Qualifications for Performing Medical Radiography"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Medical Radiography."

> **Qualifications for Performing Medical Radiography**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in radiography by the American Registry of Radiologic Technologists (ARRT) or equivalent perform all medical radiography procedures.

Main Motion C-11.22

Rescind the Position Statement "Qualifications for Performing Nuclear Medicine"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Nuclear Medicine."

> **Qualifications for Performing Nuclear Medicine**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in nuclear medicine by the American Registry of Radiologic Technologists (ARRT), Nuclear Medicine Technology Certification Board (NMTCB) or equivalent perform all nuclear medicine procedures.

Main Motion C-11.23

Rescind the Position Statement "Qualifications for Performing Radiation Therapy"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Radiation Therapy."

> **Qualifications for Performing Radiation Therapy**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in radiation therapy by the American Registry of Radiologic Technologists (ARRT) or equivalent perform all radiation therapy procedures.

Main Motion C-11.24

Rescind the Position Statement "Qualifications for Performing Sonography"

The Practice Standards Council moves to rescind the position statement titled "Qualifications for Performing Sonography."

> **Qualifications for Performing Sonography**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that only radiologic technologists certified in sonography by the American Registry for Diagnostic Medical Sonography (ARDMS) or the American Registry of Radiologic Technologists (ARRT) or equivalent perform all sonography procedures.

Main Motion C-11.25

Adopt the Advisory Opinion Statement titled "Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector"

The Practice Standards Council moves to adopt the advisory opinion statement titled "Injecting Medication in Peripherally Inserted Central Catheter Lines or Ports with a Power Injector."

The Practice Standards for Medical Imaging and Radiation Therapy

Advisory Opinion Statement

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

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 individual must exercise professional and prudent judgment in determining whether the performance of a given act is within the scope of practice for which the individual is licensed, 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
ASRT House of Delegates

Main Motion C-11.26

Rescind the Position Statement "Peripherally Inserted Central Catheter (PICC) Lines or Ports for Power Injectors"

The Commission moves to rescind the position statement titled "Peripherally Inserted Central Catheter (PICC) Lines or Ports for Power Injectors."

> **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.

Main Motion C-11.27

Rescind the Position Statement "Education of Personnel Performing Digital Radiography"

The Practice Standards Council moves to rescind the position statement titled "Education of Personnel Performing Digital Radiography."

> **Education of Personnel Performing Digital Radiography**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that all personnel performing digital radiography be educationally prepared and clinically competent in the operation of this equipment, including methods to reduce patient radiation dose.

Main Motion C-11.28

Rescind the Position Statement "Ensuring Radiation Exposures Are As Low As Reasonably Achievable"

The Commission 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 (ASRT) 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-11.29

Rescind the Position Statement "Evaluating Medical Images for Technical Adequacy"

The Commission 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 (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.

Main Motion C-11.30

Rescind the Position Statement "Peripherally Inserted Central Catheter (PICC) Placement and Removal"

The Practice Standards Council moves to rescind the position statement titled "Peripherally Inserted Central Catheter (PICC) Placement and Removal."

> **Peripherally Inserted Central Catheter (PICC) Placement and Removal**
>
> It is the position of the ASRT that placement and removal of peripherally inserted central catheters is within the scope of practice for radiologic technologists with appropriate clinical and didactic education where state statutes and/or institutional policy permits.

Main Motion C-11.31

Rescind the Position Statement "Removal of Devices for Invasive Radiologic Procedures"

The Practice Standards Council moves to rescind the position statement titled "Removal of Devices for Invasive Radiologic Procedures."

> **Removal of Devices for Invasive Radiologic Procedures**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that the removal of devices for invasive radiologic procedures is within the scope of practice for radiologic technologists with appropriate clinical and didactic education and where federal or state law and/or institutional policy permit.

Main Motion C-11.32

Rescind the Position Statement "Use of Imaging Specialties in Radiation Therapy"

The Practice Standards Council moves to rescind the position statement titled "Use of Imaging Specialties in Radiation Therapy."

> **Use of Imaging Specialties in Radiation Therapy**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that it is within the radiation therapist's scope of practice to utilize plain film radiography, fluoroscopy, computed tomography (CT), magnetic resonance (MR) imaging and sonography for the explicit intent of simulation, treatment planning or treatment delivery with appropriate clinical and didactic education and the demonstration of competency, where federal or state law and/or institutional policy permit.

Main Motion C-11.33

Rescind the Position Statement "Verbal and/or Telephone Orders"

The Practice Standards Council moves to rescind the position statement titled "Verbal and/or Telephone Orders."

> **Verbal and/or Telephone Orders**
>
> It is the position of the American Society of Radiologic Technologists (ASRT) that it is within the scope of practice of radiologic technologists to receive, relay and document verbal, facsimile, electronic and/or telephone orders in the patient's chart where federal or state law and/or institutional policy permit.

Main Motion C-11.34

Professional Programmatic Peer Review

I move that the ASRT adopt a position statement titled "Professional Programmatic Peer Review" that reads: "The American Society of Radiologic Technologists (ASRT) supports professional programmatic peer review for all medical imaging and radiation therapy educational programs."

Main Motion C-11.35

Continuing Education of Personnel in Area of Practice to Reduce Radiation Dose

I move that ASRT adopt a position statement titled "Continuing Education of Personnel in Area of Practice and to Reduce Radiation Dose" that reads: "It is the position of the American Society of Radiologic Technologists that the continuing education of registered radiologic technologists includes their areas of practice and methods to reduce radiation dose."

Main Motion C-11.36

Adopt the Advisory Opinion Statement titled "Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists"

The Practice Standards Council moves to adopt the Advisory Opinion Statement titled "Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists."

The Practice Standards for Medical Imaging and Radiation Therapy

Advisory Opinion Statement

Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists

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 practitioners 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 practitioner'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 instructor3.

Evidentiary Documentation:

Current Literature

Guidance for the Communication of Clinical and Imaging Observations and Procedure Details by Radiologist Assistants to Supervising Radiologists
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

3 American Society of Radiologic Technologists, "Practice Standards for Medical Imaging and Radiation Therapy: Glossary" Effective June 27, 2010

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.

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

4 American Society of Radiologic Technologists, "Radiologist Assistant Curriculum" ©Copyright 2011

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 Activities5.

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)

5 American Registry of Radiologic Technologists, "Registered Radiologist Assistant Entry-Level Clinical Activities" Effective January 2011

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)."6

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*.

Radiologist Assistant Clinical Performance Standards7

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)*

6 American Society of Radiologic Technologists, "Practice Standards for Medical Imaging and Radiation Therapy: Radiologist Assistant Practice Standards" Effective June 27, 2010

7 American Society of Radiologic Technologists, "Practice Standards for Medical Imaging and Radiation Therapy: Radiologist Assistant Practice Standards" Effective June 27, 2010

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)

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 practitioner must exercise professional and prudent judgment in determining whether the performance of a given act is within the scope of practice for which the practitioner is licensed, 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 practitioners 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
ASRT House of Delegates