Radiologic and Imaging Nursing
Radiologic and Imaging Nursing
The American Nurses Association (ANA) and the Association for Radiologic and Imaging Nursing (ARIN) are national professional associations. This publication—Radiologic and Imaging Nursing: Scope and Standards of Practice—reflects the thinking of the practice specialty of holistic nursing on various issues and should be reviewed in conjunction with state board of nursing policies and practices. State law, rules, and regulations govern the practice of nursing, while Radiologic and Imaging Nursing: Scope and Standards of Practice guides radiologic and imaging nurses in the application of their professional skills and responsibilities.

The Association for Radiologic and Imaging Nursing (ARIN) is the professional organization for nurses who practice in diagnostic, interventional, and therapeutic imaging environments. ARIN’s core purpose is to foster the growth of nurses who advance the standard of care in the imaging environment. ARIN strives to be at the forefront of change with a constant focus on improving patient safety and quality care and by supporting the innovative role of the nurse in the imaging environment.

The American Nurses Association (ANA) is the only full-service professional organization representing the interests of the nation’s 3.1 million registered nurses through its constituent/state nurses associations and its organizational affiliates. The ANA advances the nursing profession by fostering high standards of nursing practice, promoting the rights of nurses in the workplace, projecting a positive and realistic view of nursing, and by lobbying the Congress and regulatory agencies on health care issues affecting nurses and the public.

Copyright © 2013 American Nurses Association and Association for Radiologic and Imaging Nursing. All rights reserved. No part of this book may be reproduced or used in any form or any means, electronic or mechanical, including photocopying and recording, or by any information storage and retrieval system, without permission in writing from the publisher.


First printing: April 2013
# Contents

**Contributors**

<table>
<thead>
<tr>
<th>Contributors</th>
<th>v</th>
</tr>
</thead>
</table>

**Introduction**

<table>
<thead>
<tr>
<th>Audience for This Publication</th>
<th>ix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the Scope of Radiologic and Imaging Nursing Practice</td>
<td>x</td>
</tr>
<tr>
<td>Development and Function of Nursing Standards</td>
<td>x</td>
</tr>
<tr>
<td>The Function of Competencies in Standards</td>
<td>xi</td>
</tr>
<tr>
<td>The Nursing Process</td>
<td>xi</td>
</tr>
</tbody>
</table>

**Scope of Radiologic and Imaging Nursing Practice**

| Foundation of Radiologic and Imaging Nursing | 1 |
| History of Radiology and Radiologic and Imaging Nursing | 1 |
| Populations Served | 4 |
| Practice Settings | 4 |
| Definition and Description of Radiologic and Imaging Nursing | 5 |
| Licensure and Education of Radiologic and Imaging Registered Nurses | 9 |
| Radiologic and Imaging Nurse Generalist | 10 |
| Advanced Practice Registered Nurse in Radiologic and Imaging Nursing Practice | 13 |
| Certification in Radiologic and Imaging Nursing | 14 |
| Issues and Opportunities in Radiologic and Imaging Nursing | 15 |
| Summary of the Scope of Radiologic and Imaging Nursing | 16 |

**Standards of Radiologic and Imaging Nursing Practice**

| Standards of Practice for Radiologic and Imaging Nursing | 17 |
| Standard 1. Assessment | 19 |
| Standard 2. Diagnosis | 22 |
| Standard 3. Outcomes Identification | 23 |
| Standard 4. Planning | 24 |
## CONTENTS

Standard 5. Implementation  
  Standard 5A. Coordination of Care 29  
  Standard 5B. Health Teaching and Health Promotion 30  
  Standard 5C. Consultation 32  
  Standard 5D. Prescriptive Authority and Treatment 33  
Standard 6. Evaluation 34  
Standards of Professional Performance for Radiologic and Imaging Nursing 36  
  Standard 7. Ethics 36  
  Standard 8. Education 38  
  Standard 9. Evidence-Based Practice and Research 39  
  Standard 10. Quality of Practice 40  
  Standard 11. Communication 42  
  Standard 12. Leadership 43  
  Standard 13. Collaboration 45  
  Standard 14. Professional Practice Evaluation 47  
  Standard 15. Resource Utilization 48  
  Standard 16. Environmental Health 49  

Glossary 50  

References and Bibliography 60  


Index 106
Contributors

This document was developed by the Association for Radiologic and Imaging Nursing (ARIN) Scope and Standards Revision Committee. The members of the committee gratefully acknowledge the work of others who developed the initial standards of radiologic nursing practice published by the American Radiology Nurses Association (ARNA) in 1998, *Radiology Nursing: Scope and Standards of Practice*, published by ARNA and the American Nurses Association (ANA) in 2007, and those who developed and reviewed drafts of this document.

**ARIN Scope and Standards Revision Committee**

**Chris Cavanaugh, BSN, RN, CRNI, VA-BC**
Board Member, ARIN 2011–2013, Clinical Educator, HealthStarCES

Ms. Cavanaugh has more than 15 years of nursing experience with a focus on vascular access and radiology. Experience includes home care, long-term care, and acute care settings, including critical care and radiology. She has experience in industry; as an entrepreneur, including legal nurse consulting; and as an expert witness and educator. She currently serves as co-chair of the conference committee of the Association of Vascular Access and maintains certification in vascular access.

**Katherine Duncan, BA, RN, CRN**
Secretary, ARIN 2011–2013, Clinical Nurse, University of North Carolina Hospitals, Ambulatory Care Radiology, UNC Healthcare Faculty for AHA BLS/ACLS Training, Chapel Hill, North Carolina

Ms. Duncan has nine years of experience working in all radiologic and imaging modalities. She is an author in the *ARIN Core Curriculum for Radiologic and Imaging Nursing, 2nd Edition*, and the upcoming third edition, and has
extensive speaking experience at the local, state, and national levels for radiology nurses and technologists. She is a member of the American Association of Legal Nurse Consultants and International Nursing Association. Ms. Duncan maintains certification as a radiology nurse.

Cheryl Jaglowski-Ho, RN, CRN, CEN
Board Member, ARIN 2010–2012, Radiology Nurse at Durham Regional Hospital of Duke University Health System, Durham, North Carolina

Ms. Jaglowski-Ho has more than 30 years of nursing experience, with specialties including radiology and emergency nursing. She is active on several ARIN committees, including the Chapter Development and Awards committees. She actively promotes patient and family education as co-chair of Durham Regional Hospital’s Patient and Family Education Council. Ms. Jaglowski-Ho has also lectured locally and nationally on radiology topics. She maintains certification as a radiology nurse and emergency nurse.

Christy Lee, MSN, APRN-BC, CRN
President-Elect, Association for Radiologic and Imaging Nursing, 2011–2012. Radiology Nurse Supervisor, LSU Health, University Medical Center, Lafayette, Louisiana

Ms. Lee has more than 30 years of nursing experience in a variety of settings, including critical care, oncology, emergency, and infectious disease. Ms. Lee has worked in radiologic and imaging nursing for more than 10 years and has been very active in ARIN educational conference planning for many years. She maintains certification as a radiology nurse and as an adult nurse practitioner.

Linda McDonald, MSN, RN, CRN
President, Association for Radiologic and Imaging Nursing, 2011–2012. Supervisor, Radiology Clinical Services, Allegheny General Hospital, Pittsburgh, Pennsylvania

Ms. McDonald has more than 35 years of nursing experience, caring for patients of all ages in settings ranging from intensive care to home care. Her past 20 years of experience have been dedicated to radiology and imaging nursing and she is a certified radiology nurse. She served as ARIN Treasurer from 2009 to 2011 and as president and board member of the Greater Pittsburgh Chapter of ARIN. Ms. McDonald has lectured on a variety of radiology and imaging topics at the local and national levels, co-authored a book chapter on radiology nursing, and is a member of Sigma Theta Tau International.
Emily Timmreck, MSN, ACNP-BC
Board Member, ARIN 2010–2012, Interventional Radiology Nurse Practitioner, George Washington University Hospital, Washington, DC

Ms. Timmreck has 13 years of nursing experience and is currently working as a nurse practitioner in interventional radiology. Her nursing career includes a wide spectrum of interests, including critical care, radiology nursing, international health, nursing education, and management. Ms. Timmreck has been active in RadAid, an organization whose mission is to bring radiology services to developing nations, and is passionate about promoting the field of radiology nursing. She has lectured both locally and nationally on a variety of topics specific to interventional radiology, critical care, and international health.

Brenda Hicks Wickersham, MAV, RN, CRN

Ms. Wickersham has practiced in interventional radiology nursing for 22 years and has contributed to imaging nursing through serving the Northwest Chapter of ARIN, as a Core Curriculum for Radiologic and Imaging Nursing author (1999, 2007, and upcoming edition), and as an ARIN board member (2008–2010). She was the developing author of the ARIN position statement Bariatric Patient Safety in the Imaging Environment (January 2011). Ms. Wickersham maintains certification in radiology nursing.

ARIN Staff
Karen Green, MHA, BSN, RN, CRN
Harriet McClung, BA
Cynthia Reeser, BA

ARIN Board of Directors, 2011–2012
Linda McDonald, MSN, RN, CRN, President
Christy Lee, MSN, APRN-BC, CRN, President-Elect
Margaret Browne-McManus, BSHA, RN, Immediate Past President
Katherine Duncan, BA, RN, CRN, Secretary
Brenda Wickersham, MAV, RN, CRN, Treasurer
Emily Timmreck, MSN, ACNP-BC, Board Member
Cheryl Jaglowski-Ho, RN, CRN, CEN, Board Member
Chris Cavanaugh, BSN, RN, CRNI, VA-BC, Board Member
American Nurses Association Staff

Carol Bickford, PhD, RN-BC, CPHIMS – Content editor
Maureen E. Cones, Esq. – Legal counsel
Yvonne Daley Humes, MSA – Project coordinator
Eric Wurzbacher, BA – Project editor

About the Association for Radiologic and Imaging Nursing

The Association for Radiologic and Imaging Nursing (ARIN) is the professional organization for nurses who practice in diagnostic, interventional, and therapeutic imaging environments. ARIN’s core purpose is to foster the growth of nurses who advance the standard of care in the imaging environment. ARIN strives to be at the forefront of change with a constant focus on improving patient safety and quality care and by supporting the innovative role of the nurse in the imaging environment.

About the American Nurses Association

The American Nurses Association (ANA) is the only full-service professional organization representing the interests of the nation’s 3.1 million registered nurses through its constituent/state nurses associations and its organizational affiliates. The ANA advances the nursing profession by fostering high standards of nursing practice, promoting the rights of nurses in the workplace, projecting a positive and realistic view of nursing, and by lobbying the Congress and regulatory agencies on health care issues affecting nurses and the public.

About Nursesbooks.org, The Publishing Program of ANA

Nursesbooks.org publishes books on ANA core issues and programs, including ethics, leadership, quality, specialty practice, advanced practice, and the profession’s enduring legacy. Best known for the foundational documents of the profession on nursing ethics, scope and standards of practice, and social policy, Nursesbooks.org is the publisher for the professional, career-oriented nurse, reaching and serving nurse educators, administrators, managers, and researchers as well as staff nurses in the course of their professional development.
Radiologic and Imaging Nursing: Scope and Standards of Practice was developed by the Association for Radiologic and Imaging Nursing (ARIN); was posted for public comment from August 13 to September 28, 2012; and is consistent with Nursing: Scope and Standards of Practice, 2nd Edition, published by American Nurses Association (ANA, 2010a). ARIN is comprised of more than 2,100 radiological and imaging nurses who care for healthcare consumers in radiologic and imaging arenas. This edition of Radiologic and Imaging Nursing: Scope and Standards of Practice replaces all previously published versions.

Radiologic and imaging registered nurses practicing in the United States have four professional resources that inform their thinking and decision-making and guide their practice. First, Code of Ethics for Nurses with Interpretive Statements (ANA, 2001) lists the nine succinct provisions that establish the ethical framework for registered nurses across all roles, levels, and settings. Second, Nursing’s Social Policy Statement: The Essence of the Profession (ANA, 2010b) conceptualizes nursing practice, describes the social context of nursing, and provides the definition of nursing.

Third, Nursing: Scope and Standards of Practice, 2nd Edition (ANA, 2010a) outlines the expectations of the professional role of the registered nurse. It states the scope of practice and presents the standards of professional nursing practice and their accompanying competencies. These documents provided the background for the development of the fourth professional resource, Radiologic and Imaging Nursing: Scope and Standards of Practice. This document outlines the expectations of the registered nurse practicing in the radiologic and imaging nursing specialty.
**Audience for This Publication**

Radiologic and imaging registered nurses in every role in any radiologic and imaging setting constitute the primary audience for this professional resource. Legislators, regulators, legal counsel, and the judiciary system will also want to reference it. Radiologic and imaging agencies and organizations, radiologic and imaging nurse or technologist administrators, and interprofessional colleagues will likewise find this an invaluable reference. In addition, the people, families, communities, and populations using radiologic and imaging healthcare technologies and nursing services can use this document to better understand what constitutes radiologic and imaging nursing and who its members are: registered nurses and advanced practice registered nurses committed to high-quality healthcare consumer care with compassion for the human condition in highly technological environments that make radiologic and imaging nurses unique (Sasso, 2008).

**Description of the Scope of Radiologic and Imaging Nursing Practice**

The Scope of Radiologic and Imaging Nursing Practice describes the *who, what, where, when, why,* and *how* of nursing practice. Each of these questions must be answered to provide a complete picture of the dynamic and complex practice of nursing and its evolving boundaries and membership. The profession of nursing has one scope of practice that encompasses the full range of nursing practice pertinent to general and specialty practice. The depth and breadth to which individual registered nurses engage in the total scope of nursing practice is dependent on education, experience, role, and the population served.

**Development and Function of Nursing Standards**

The Standards of Radiologic and Imaging Nursing Practice are authoritative statements of the duties that radiologic and imaging registered nurses, regardless of role, population, or specialty, are expected to perform competently. The standards published herein may serve as evidence of the standard of care, with the understanding that application of the standards depends on context. The standards are subject to change with the dynamics of the nursing profession, as new patterns of professional practice are developed and accepted by the nursing profession and the public. In addition, specific conditions and clinical circumstances may also affect the application of the standards at a given time.
The Function of Competencies in Standards

The competencies that accompany each standard may be evidence of compliance with the corresponding standard. The list of competencies is not exhaustive. Whether a particular standard or competency applies depends on the circumstances. For example, a radiologic and imaging registered nurse providing treatment to an unconscious, critical healthcare consumer who presents to the hospital by ambulance without family has a duty to collect comprehensive data pertinent to the healthcare consumer’s health (see Standard 1, Assessment). However, under the attendant circumstances, that nurse may not be expected to assess family dynamics and impact on the healthcare consumer’s health and wellness (Assessment Competency). In the same circumstance, Standard 5B, Health Teaching and Health Promotion, may not apply at all.

The Nursing Process

The nursing process is often conceptualized as the integration of singular actions of assessment, diagnosis, identification of outcomes, planning, implementation, and evaluation. The nursing process in practice is not linear, however, with a single feedback loop from evaluation to assessment. Rather, it relies heavily on bidirectional feedback loops from each component.

The Standards of Practice coincide with the steps of the nursing process, to represent the directive nature of the standards as the professional nurse completes each component of the nursing process. Similarly, the Standards of Professional Performance relate to how the professional nurse adheres to the Standards of Practice, completes the nursing process, and addresses other nursing practice issues and concerns (ANA, 2010a).
This page intentionally left blank
Scope of Radiologic and Imaging Nursing Practice

Foundation of Radiologic and Imaging Nursing
Radiologic and imaging nursing is an exciting and dynamic specialty that combines cutting-edge technology with the art and science of nursing. Visualization of human anatomy and physiology, and a detailed view of the pathophysiology of many disease processes, create a unique practice setting. This arena blends the nursing commitment to high-quality patient care with compassion for the human condition in a highly technological environment that makes radiologic and imaging nursing unique.

History of Radiology and Radiologic and Imaging Nursing
Wilhelm Conrad Roentgen, a professor of physics at the University of Würzburg, Germany, discovered X-rays by accident in 1895, hence the name X-ray for the unknown. His inadvertent creation of an image on a glass plate while a cathode ray tube was active was a major breakthrough. For the first time, scientists could see structures under the skin. For this discovery, Roentgen won the first Nobel Prize for Physics in 1901. Other early scientists who helped lay the foundation of radiology were Antoine-Henri Becquerel, who discovered the radioactivity of uranium; and Marie and Pierre Curie, with their isolation of radium. These three shared the 1903 Nobel Prize for Physics. It would be another 15 years before this knowledge would be used in medicine.

The field of radiology, which exploits short-wavelength electromagnetic radiation that can penetrate matter—the X-ray—has evolved over the years, with many technological advancements and an arsenal of imaging modalities. These unique imaging modalities have led to specialties in the radiology field. The use of ultrasound waves, magnetic fields, computer enhancements,
and injectable radioactive substances have created other means to diagnose and treat disease processes and further advance the ability to understand the human condition.

Radiation has been studied extensively, and research on its effects, its usefulness, and its dangers continues. This technological progress has placed new demands on healthcare workers and increased the need for highly trained radiologists, nurses, and technologists working as a team to ensure patient safety.

Acknowledgment of the uniqueness of the practice setting and the specialized body of knowledge required to care for healthcare consumers in this arena led to the foundation of the American Radiological Nurses Association (ARNA), which is now known as the Association for Radiologic and Imaging Nursing (ARIN). In 1980, the call went out in RN Magazine for radiology nurses to organize. The following year, 35 radiology nurses from 15 states met in conjunction with the 67th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA). In November of 1981, to advance their practice and institute standards of care, ARNA was established. Partnering with RSNA was a strategic move for ARNA; it allowed the member nurses to share speakers and facilities with the medical community for their educational venues. ARNA became a member of RSNA’s Associated Sciences Consortium in 1985 and continues to be a member. ARNA published the first radiology nursing scope and standards of practice in 1998.

In 2001, ARNA held a first annual educational meeting in conjunction with the Society of Interventional Radiology (SIR) and the Association of Vascular and Interventional Radiographers (AVIR). This provided more educational opportunities as well as team-building opportunities with the radiologists and radiologic technologists. ARNA also sought recognition from other nursing organizations and soon joined the Nursing Organization Liaison Forum/ National Federation of Specialty Nursing Organizations (NOLF/NFSNO). This allowed ARNA to have a voice in specialty nursing issues. In reaction to the nursing shortage of the 1990s, NOLF/NFSNO dissolved and reformed as the Nursing Organizations Alliance (the Alliance). ARNA has been represented at each meeting of this new organization.

Radiologic nursing was recognized by American Nurses Association (ANA) as a nursing specialty in 2007. ANA and the ARNA jointly published the 2007 edition of the Radiology Nursing: Scope and Standards of Practice.

ARNA began to attract nurses from many countries, and international membership increased. As multiple modalities emerged, radiology departments transformed into imaging departments. In 2008, the ARNA Board of
Directors met for a strategic planning session. During this session, the need for the organization’s name to reflect this evolution became apparent. ARNA thus changed its name to the Association for Radiologic and Imaging Nursing (ARIN) in June 2008.

Another influence on the growth and development of radiological and imaging nursing was The Joint Commission (TJC), formerly known as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). TJC standards published in 1992 prompted the organization of radiology and imaging departments, which heightened the need for radiologic and imaging nurses. TJC set a standard mandating that patients receive the same level of care in diagnostic and procedural areas that they would receive in inpatient units. Additionally, evaluation of national outcomes led to a focus on procedural sedation in radiology and imaging.

The Joint Commission National Patient Safety Goals (NPSG) established standards to improve patient safety in 2002. The NPSG prompted change of many practices in radiology and imaging departments. TJC also wanted to see nurses directly supervised by nurses. This led to more radiologic and imaging nurses and more supervision by nurses with radiology and imaging experience. Many hospitals had to manage this requirement creatively by cross-training perianesthesia care units (PACUs) and transport nurses to cover radiologic and imaging areas when required.

The move toward minimally invasive procedures was driven by changes in reimbursement through Diagnostic Related Groupings (DRGs) and Medicare, with private insurance following soon thereafter. Procedures formerly considered surgical and requiring hospitalization were transformed to minimally invasive procedures that could be performed on an outpatient basis in the radiology or imaging department. Smaller incisions, less pain, and shorter recovery times led radiology and imaging in a new direction. Inferior vena cava (IVC) filters, internal ureteral stenting, percutaneous drainage tubes, central venous access for dialysis, cerebral embolization, stroke interventions, and oncologic treatments were a few of the innovative procedures that emerged.

Technological advances and organizational changes expanded the role of the radiologic and imaging nurse to meet the demands of patient care and safety in the radiology and imaging department. Just as surgical patients receive nursing intervention early in their hospital stays, patients undergoing care in the radiology and imaging department may require the radiologic and imaging nurse’s attention and care from the time a test or procedure is requested until the patient is discharged.
SCOPE OF RADILOGIC AND IMAGING NURSING PRACTICE

These changes in the practice setting, and growing awareness of the unique and specialized knowledge needed to perform imaging procedures competently, led ARNA to produce its first certification exam in 1998. The Core Curriculum for Radiological Nursing (Morgan & Nunnelee, 1999) soon followed to serve as a guide for nurses coming into this new field of practice. A second edition was published in 2008.

Populations Served
Radiology and imaging healthcare consumers range in age from prenatal to geriatric. They may present with actual or potential alterations in health status in one or more body systems. The radiologic and imaging nurse knows that healthcare consumers may also experience accompanying mental, emotional, or spiritual distress. Radiologic and imaging nurses are skilled in the initial treatment of alterations that may result from radiologic or imaging procedures. These alterations may include contrast-induced allergies, changes in hemodynamic status, complications from procedural sedation, and/or a variety of other side effects.

Radiologic and imaging nurses diagnose and treat the range of human responses within their practice settings, scope of licensure, and available resources. Radiologic and imaging nurses prioritize healthcare consumer care activities based on healthcare consumer acuity, risk factors, safety needs, the urgent or expedient nature of the procedure, and available resources. Radiologic and imaging nurses serve their community by promoting preventive care, teaching health maintenance, and advocating for the healthcare consumer.

Practice Settings
Radiologic and imaging nursing practice takes place in settings that span the continuum of care: inpatient and outpatient facilities in hospitals, varying in size from small community facilities to university medical centers; same-day or limited-stay facilities; freestanding outpatient centers; and ambulatory radiology and imaging clinics. Radiologic and imaging nurses tend to the needs of healthcare consumers in locations that utilize X-ray, fluoroscopy, angiography, ultrasound, computed tomography (CT), magnetic resonance imaging (MRI), and nuclear imaging. Radiologic and imaging nurses may be found working in a variety of settings, such as interventional radiology, diagnostic imaging, cardiac catheterization, electrophysiology, radiation oncology, breast imaging,
and gastroenterology. With the development of hybrid procedural suites combining surgical procedures with imaging modalities, the number of locations where radiologic and imaging nurses are found will continue to rise.

Radiology and imaging is a high-volume specialty in which efficient throughput is desirable. Because of this rapid pace, the radiologic and imaging nurse–healthcare consumer interactions may be single or multiple brief encounters. Radiologic and imaging nurses work in practice settings in which there are often simultaneous demands competing for their attention and services. This level of demand requires the radiologic and imaging nurse to partner with other clinical nurses to ensure healthcare consumer safety and appropriate care. This may include use of the PACU for recovery after procedural sedation or the intensive care unit (ICU) for close monitoring after critical procedures.

Radiologic and imaging nursing activities vary depending on the practice setting and the nursing staff available. In smaller facilities, one nurse may cover all the healthcare consumer care needs of the department, whereas larger facilities may employ an entire department of nurses. Healthcare consumer advocacy and education are primary responsibilities of the nurse, whether a staff of one or many. Coordination of care with other healthcare team members is essential for a successful healthcare consumer encounter. This encounter often begins with a phone call from the radiologic and imaging nurse to the healthcare consumer at home before a scheduled procedure. This call enables the nurse to screen the healthcare consumer clinically, ensure that the healthcare consumer and family understand the procedure, and answer questions.

**Definition and Description of Radiologic and Imaging Nursing**

Radiologic and imaging nursing is the assessment, care planning, and direct care of healthcare consumers before, during, and after diagnostic and therapeutic imaging procedures. Radiologic and imaging nurses always advocate for healthcare consumers. They are frequently the voice of those unable to speak for themselves. Safety of the healthcare consumer, as well as of the staff, is a primary concern.

Protocols and healthcare consumer guidelines are based on best evidence-based practice. Such research is ongoing and performed in conjunction with other radiological and imaging organizations, such as the American College of Radiology (ACR), SIR, and the American Society of Radiologic Technologists (ASRT). For example, research is continuing to seek the best method to
decrease the nephrotoxicity of contrast agents in high-risk healthcare consumers. Studies have shown that contrast allergies are not positively linked to shellfish allergies, as previously believed. Prescreening of at-risk healthcare consumers is a major role of the radiologic and imaging nurse, and staying current in the most recent research will help to ensure healthcare consumer safety.

Radiologic and imaging nurses influence healthcare consumer care in a variety of settings, and the nursing roles in radiologic and imaging settings may be as diverse as the specialty itself. Nurses may be employed as administrators, nursing recruiters, educators, performance improvement or risk management specialists, and marketers. Subspecialty areas include diagnostic imaging; vascular and interventional procedures (sometimes called special procedures); computed tomography scanning; nuclear medicine, including positron emission tomographic (PET) scanning, ultrasound, magnetic resonance imaging (MRI), breast imaging, radiation oncology, lithotripsy, cardiac catheterization, and related research; education; marketing; and consulting areas.

Radiologic and imaging nurses work with and teach nurses, student nurses, radiologic technology students, residents, and medical students as they rotate through radiologic and imaging areas. Many institutions include radiologic and imaging nursing as a permanent part of new nurse orientation and have created nursing guides to radiologic and imaging procedures to aid staff nurses in planning healthcare consumer care.

Advanced practice registered nurses have many roles in radiologic and imaging practice. Roles may include performing clinical evaluations, performing and/or assisting with actual interventional procedures, conducting research, or performing follow-up care for patients who have undergone complex invasive procedures.

In accordance with Nursing’s Social Policy Statement (ANA, 2010b), radiologic and imaging nurses address issues of health and wellness with healthcare consumers during therapeutic and interventional procedures in radiologic and imaging departments. They work within institutional and other constraints to ensure that the nursing care they provide is of the highest quality and is targeted toward the needs of the individual healthcare consumer.

Radiologic and imaging nursing continues to advance as a specialty area of practice with a distinct body of knowledge that is increasingly evidence-based. It bases its ethics on Code of Ethics for Nurses with Interpretive Statements (ANA, 2001). The radiologic and imaging nurse adhering to this professional code acknowledges the healthcare consumer’s right to privacy and confidentiality, to be informed, and to be treated with dignity. Furthermore, the radiologic
and imaging nurse recognizes the healthcare consumer as a unique individual who is part of a structure that involves family, community, and society.

Both the radiologic and imaging registered nurse and the APRN respect the healthcare consumer’s cultural beliefs, acknowledge the healthcare consumer’s diversity, and honor the healthcare consumer’s individuality. In this way, these nurses ensure that the care they provide is nonjudgmental and nondiscriminatory, regardless of the healthcare consumer’s characteristics or attributes, such as religion or lifestyle.

The radiologic and imaging nurse serves as a healthcare consumer advocate and helps the healthcare consumer to make decisions regarding health care. In the radiologic and imaging environment, nurses promote professional ethics for themselves and on the part of those with whom they work (e.g., radiologists, radiologic technologists, other radiologic and imaging nurses). Radiologic and imaging nurses also promote their own professional integrity and that of others.

The scope of radiologic and imaging nursing practice is guided by federal and state laws and regulations, clinical research, the code of ethics (ANA, 2001), best practices that are evidence-based, professional organizations, standards of practice (ANA, 2010a), and position statements and guidelines developed by ARIN and other specialty organizations, such as the Association of peri-Operative Registered Nurses (AORN).

Radiologic and imaging nurses require specialized knowledge and clinical skills to deal with the possible effects of radiologic interventions on healthcare consumers from infants to older adults. In addition to standard nursing education and clinical experience, a greater understanding of the following subjects facilitates radiologic and imaging nursing practice:

- Adaptation and change process
- Coping mechanisms
- Cultural and spiritual diversity
- Growth and development, to include both pediatric and older-adult care
- Human sexuality
- Communication skills
- Therapeutic use of self
- Healthcare consumer advocacy
■ Safety
■ Infection prevention principles and practices
■ Informed consent
■ Radiation safety principles and practices
■ Stages of pregnancy and fetal development, and risks of radiation exposure
■ Radiological emergencies and appropriate initial interventions
■ Procedural sedation: risks, benefits, complications, and reversal agents
■ Pain control and symptom management
■ Positioning for optimum comfort, radiation protection, and procedural needs
■ Risks and complications associated with administration of contrast media
■ Preparation for individual procedures, including education and screening for these procedures
■ Risks and complications associated with procedures
■ Technological advances that affect healthcare consumer care and departmental operations

Radiologic and imaging nurses use the nursing process in planning for and providing care to healthcare consumers undergoing diagnostic and therapeutic imaging procedures. The nursing process includes assessment, diagnosis, outcomes identification, creation of a plan of care, implementation of the plan of care, and evaluation of the healthcare consumer’s progress in attaining the identified outcomes. The plan of care addresses age-appropriateness, developmental appropriateness, cultural appropriateness, family-centricity, and environmentally sensitive issues.

Radiologic and imaging nursing roles include, but are not limited to, that of healthcare consumer advocate, care coordinator, caregiver, role model, educator, resource person, consultant, communication liaison, manager, administrator, and researcher. Radiologic and imaging nurses serve as part of the interprofessional team that includes radiologists, radiologic technologists,
primary care physicians, inpatient and home health nurses, the healthcare consumer and family members, and others. Radiologic and imaging nurses focus on the healthcare consumer and the healthcare consumer’s responses to radiological interventions or physiological changes while in the radiology and imaging department or under the care of the radiologist or radiologic and imaging nurse.

**Licensure and Education of Radiologic and Imaging Registered Nurses**

All registered nurses are licensed and authorized by a state, commonwealth, or territory to practice nursing. Professional licensure of the healthcare professions is established by each jurisdiction to protect the public safety and authorize the practice of the profession. Because of this, the requirements for RN licensure and advanced practice nursing vary widely.

The registered nurse is educationally prepared for competent practice at the beginning level upon graduation from an accredited school of nursing and is qualified by national examination for RN licensure. The registered nurse is educated in the art and science of nursing, with the goal of helping individuals and groups attain, maintain, and restore health whenever possible.

The body of knowledge required for a highly competent radiologic and imaging nursing practice is not restricted to specific organ systems, disease processes, or healthcare consumer problems. Experienced nurses become proficient in one or more specialty practice areas or roles prior to specialization in radiologic and imaging nursing. These nurses may concentrate on healthcare consumer care in clinical nursing practice specialties, such as emergency nursing, critical care, or perioperative nursing. Experienced nurses new to the radiologic and imaging specialty practice will undertake structured work experiences, preceptorships, and/or mentorships.

ARIN has developed orientation materials that cover the appropriate content needed to prepare nurses for radiologic and imaging specialty practice. Although no formal academic programs exist at present, ARIN does offer several options to educate and update nurses regardless of their level of practice. A two-day course to review radiologic and imaging specifics and prepare for certification is available through the organization and taught throughout the country. Other offerings include online courses and webinars. ARIN also publishes a peer-reviewed journal, the *Journal of Radiology Nursing*, and several practice guidelines and position statements. ARNA’s *Core Curriculum for
Radiological and Imaging Nursing, 2nd Edition (2008) is a critical resource utilized by many radiologic and imaging nurses and is undergoing revision. Radiologic and imaging nurses need ongoing, specific imaging and radiologic education to keep up with the ever-expanding technology.

Others influence nursing and support the direct care rendered to healthcare consumers by professional nurses in clinical practice. Credentialing is one form of acknowledging such specialized knowledge and experience. Credentialing organizations may mandate specific nursing educational requirements, as well as timely demonstrations of knowledge and experience in specialty practice.

Radiologic and imaging nurses assume roles based on basic nursing preparation and scope of practice as determined by licensure, specialized informal and formal education, clinical experience, interest, talent, personal experience, and the nature of the patient population. Radiologic and imaging nurses may be generalists or advanced practice registered nurses who work in various healthcare settings. Currently, registered nurses with a diploma, associate degree, baccalaureate, master's degree, or doctoral degree practice in radiologic and imaging settings.

**Radiologic and Imaging Nurse Generalist**

The radiologic and imaging nurse generalist is a licensed registered nurse who demonstrates clinical skills and knowledge in radiologic and imaging nursing and imaging technologies. The radiologic and imaging nurse generalist should possess the basic knowledge and skills to complete activities. The application of appropriate theory and evidence-based practice as the basis for decision-making in radiologic and imaging nursing practice is essential.

Nursing and radiologic and/or imaging procedural knowledge should be used to anticipate and plan for healthcare consumer needs in the imaging environment. The radiologic and imaging nurse acts as an advocate for the healthcare consumer. Due to the highly technical environment, some staff members tend to forget about or ignore the healthcare consumer. The radiologic and imaging nurse is there to be a consumer advocate and ensure that a consumer's needs are being met while the consumer is receiving radiologic and imaging services. The radiologic and imaging nurse also advocates for appropriate medical ethics involving the healthcare consumer. Discussion about ethical appropriateness of some radiologic and imaging procedures is many times initiated by the radiologic and imaging registered nurse.
The radiologic and imaging nurse is expert in assessing and treating anxiety, pain, claustrophobia, and underlying disease conditions (such as acute bleeding conditions, pulmonary emboli, vascular disease, cardiac disease, acute gallbladder or hepatic conditions, and renal obstruction). Expert care related to interventions, tests, and procedures specific to the radiology and imaging department is provided. The radiologic and imaging nurse recognizes the potential risks and complications from radiology and imaging procedures and can assist in the initial treatment of adverse effects particularly associated with contrast media administration and in the treatment of these complications.

Specific attention to proper transfers from wheelchairs, stretchers, or beds to the imaging table is highly important. Healthcare consumer and staff injury prevention is essential. Proper positioning on the imaging table is also extremely important. The healthcare consumer must be protected from the risk of skin breakdown, injury from moving equipment, or injury from complex positioning that may be required for completion of the imaging. The radiologic and imaging registered nurse is the expert and leads the appropriate handling of the healthcare consumer. Delivery of care in the radiologic and imaging environment should be done with vigilance to ensure quality, safe care with attention to conserving resources.

The radiologic and imaging nurse must understand the pharmacology of medications and recognize special considerations related to drugs and pharmacologic agents rarely used in other areas, such as nitroglycerin infusions for vascular spasm, intravenous glucagon to reduce peristalsis during gastric procedures, pain and anxiolytic medications for procedural sedation and immediate and long-term relief, adenosine and dobutamine for cardiac pharmacologic stress testing, thrombolytic agents for treating vascular occlusions, and diuretics and other cardiac beta blockers used to facilitate diagnostic testing. Procedural sedation must be safely and effectively administered and monitored to ensure healthcare consumer comfort and safety during radiology and imaging interventions.

The radiologic and imaging nurse needs to understand and apply radiation safety principles and serve as a resource to other healthcare personnel on radiologic and imaging healthcare consumer care. Minimizing radiation exposure to healthcare consumers and the staff caring for them is practiced at all times. The radiologic and imaging nurse participates in radiation dose monitoring for the healthcare consumer, staff, and himself or herself. Safe handling and disposal of radioactive and chemotherapeutic materials must also be ensured.
Healthcare consumer education is provided by radiologic and imaging registered nurses. This education process begins after a test or procedure is scheduled and continues throughout the continuum of care and discharge. The radiologic and imaging registered nurse teaches healthcare consumers and their families about the test or procedure they will have and the care they will receive. Questions are answered and teaching for care after discharge is done. Radiologic and imaging registered nurses are also education resources for the healthcare consumer and the family after discharge. Development of good rapport with the healthcare consumer and the family facilitates the delivery of excellent education by the radiologic and imaging registered nurse.

The nurse facilitates an interprofessional approach that enhances continuity of care and healthcare consumer care outcomes by collaborating with other healthcare providers. This includes delegating appropriate aspects of patient care to qualified personnel. The radiologic and imaging team now includes the physician, the radiologic technologist, the radiologic and imaging nurse, and other assistive personnel. This requires a reorientation of the radiology and imaging department, primarily facilitated by the addition of nursing to the team. The radiologic and imaging nurse is an essential specialist and resource who enhances both healthcare consumer and departmental outcomes.

The radiologic and imaging nurse assists in identification and education of pertinent issues such as healthcare consumer care, safety, and infection prevention. The radiologic and imaging nurse is essential to the development and implementation of ongoing performance improvement processes.

Participation in evaluation processes to enhance professional performance, including peer review, is also very important. The radiologic and imaging nurse must assume personal responsibility for continuing education and professional growth.

The radiologic and imaging nurse should understand the research process, be able to participate in data collection, and incorporate pertinent findings into practice. As interventional and research efforts increase, nurses move into positions of responsibility supporting these efforts, recruiting and following subjects, and coordinating studies.

The nursing process is a systematic, deliberate problem-solving approach to meeting the healthcare and nursing needs of healthcare consumers, utilizing assessment, diagnosis, planning, implementation, and evaluation. This has expanded the ability of the radiology and imaging department to assess the impact of changes in policy and personnel, and has helped put the healthcare
consumer first in the priorities of the department. The use of the nursing process for healthcare consumers undergoing diagnostic and therapeutic imaging procedures includes:

- Collection of ongoing data
- Synthesis and analysis of data to determine outcomes
- Development of an age-appropriate plan of care
- Implementation of the nursing plan
- Evaluation of the healthcare consumer’s responses to the plan
- Reassessment and revision of the plan and goals as indicated

Radiologic and imaging nurses are the primary healthcare consumer advocates in the radiology and imaging department. They often speak for those who cannot speak for themselves; furthermore, they protect healthcare consumers’ privacy and dignity, and ensure focus on the healthcare consumer—that is, they provide nursing care. They are also attuned to the linguistic, ethnic, religious, and sexual diversity of healthcare consumers.

Such a role helps maintain healthcare consumer confidentiality while communicating pertinent clinical data. The radiologic and imaging nurse must also provide health education and procedural teaching to healthcare consumers and significant others before, during, and after encounters. Radiologic and imaging nurses must possess excellent communication skills. Positive personal interactions and flexibility are key to providing clear instruction and communication with the healthcare consumer and family members, as well as other members of the radiology team.

**Advanced Practice Registered Nurse in Radiologic and Imaging Nursing Practice**

Another evolutionary stage in nursing practice was the development of educational programs to prepare nurses for advanced practice in direct care roles. These advanced practice registered nurse (APRN) roles include certified registered nurse anesthetists (CRNAs), certified nurse-midwives (CNMs), clinical nurse specialists (CNSs), and certified nurse practitioners (CNPs). Each has a unique history and context, but shares a focus on direct care to individual healthcare consumers. *Advanced Practice Registered Nurse* is a regulatory title and includes the four roles just listed. The core competencies for education
and the scope of practice are defined by professional associations. State law and regulations further define criteria for licensure for the designated scopes of practice. The need to ensure healthcare consumer safety and access to APRNs by aligning education, accreditation, licensure, and certification is shown in *Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, and Education* (APRN Joint Dialogue Group [JDG], 2008).

The advanced practice registered nurse has a master’s or doctoral degree and has been recognized and credentialed as an APRN in the state of practice. Additionally, the advanced practice registered nurse meets the APRN core competencies, which include ethical decision-making, physician collaboration, expert coaching and guidance, multidisciplinary consultation, research, and leadership. The increasing severity and complexity of healthcare consumer illnesses in acute care settings drive the development of radiologic and imaging advanced practice nursing roles. The APRN may function in a variety of roles and settings that include, but are not limited to: clinician, supervisor, administrator, educator, consultant, researcher, performance improvement specialist, risk manager, care coordinator, or team liaison.

In the direct healthcare consumer care setting, these nurses may work as clinical nurse specialists or nurse practitioners. They base their decisions on nursing theory combined with research and clinical knowledge. Advanced practice registered nurses in clinical roles demonstrate a high level of autonomy, rendering complex clinical decisions and initiating treatment regimens, including treatment for contrast-related events, peripheral vascular disease management, and follow-up care after therapeutic interventions. They conduct comprehensive periprocedural health assessments and demonstrate expert skill in diagnosis and treatment of complex responses of individuals, families, and communities to actual or potential health problems. They function in collegial relationships with nursing peers and physicians. The APRN acts as a resource for other nurses, physicians, and radiologic technologists.

All advanced practice registered nurses work within the larger healthcare environment. They must be current and competent in direct healthcare consumer care and comfortable serving as change agents.

**Certification in Radiologic and Imaging Nursing**

Certification is a process whereby a certifying organization or governing agency validates a registered nurse’s qualifications, knowledge, and scope of practice in a defined clinical or functional area of nursing. A nurse achieves
certification by meeting eligibility requirements determined by the governing agency and by passing a written examination on current practice standards in the specialized practice setting. Through this process, the certifying agency acknowledges to the nurse, the nurse’s colleagues, and the general public that the individual has mastered a pertinent body of knowledge associated with the nursing specialty.

The Radiologic Nursing Certification Board (RNCB) has established eligibility requirements, created an examination for initial certification, and identified a recertification process for recognition as a certified radiological nurse (CRN). Upon passing the examination, the nurse may use the initials CRN in addition to licensing and educational designations. The CRN designation attests that the nurse has demonstrated in-depth knowledge of the field of radiologic and imaging nursing. An advanced certification for radiologic and imaging nursing is not available at this time.

Radiologic and imaging nurses must maintain certification in basic life support (BLS). Those radiologic and imaging nurses who administer procedural sedation to adults should be certified in advanced cardiac life support (ACLS), and those who administer procedural sedation to the pediatric population should be certified in pediatric advanced life support (PALS). The American Heart Association (AHA) is the certifying body for BLS, ACLS, and PALS certifications.

APRNs are required to have a professional certification to be licensed to practice as nurse practitioners or clinical nurse specialists. This certification denotes their advanced practice status and is administered by governing bodies other than RNCB, such as the American Nurses Credentialing Center (ANCC). APRNs practicing in the radiology and imaging environment are encouraged to obtain specialty certification as CRNs.

### Issues and Opportunities in Radiologic and Imaging Nursing

ARIN believes that nurses must be present where and when healthcare consumer care is rendered. One of the most pressing issues identified by ARIN is the lack of dedicated radiologic and imaging nurses in all radiologic and imaging arenas. Radiologic and imaging departments have developed into highly specialized and technologically advanced settings. Similarly, the complexity and acuity level of healthcare consumer conditions has risen. Safe and effective care must be provided to all, including bariatric, pediatric, and aging
healthcare consumers. Nursing staff must address self-care, preventing fatigue and injury due to the nursing shortage and on-call shifts.

Radiologic and imaging nurses, skilled in critical care and possessing specialized knowledge in the field, are imperative to ensure safe and effective outcomes for our healthcare consumers. To that end, ARIN is focused on several opportunities: growing its membership both nationally and internationally, collaborating with organizations that share common interests, enhancing its involvement in interdisciplinary conversations to improve healthcare consumer outcomes, and encouraging ARIN members’ involvement in unit-based committees.

**Summary of the Scope of Radiologic and Imaging Nursing**

Quality care for all healthcare consumers is a primary responsibility of registered nurses. The standards of practice and professional performance can help the nurse set goals for professional growth in the specialty of radiologic and imaging nursing practice. Radiologic and imaging registered nurses practicing within this specialty must expand their knowledge of radiologic and imaging nursing practice to be able to deliver quality care to healthcare consumers.

The art of nursing also has an essence that is not defined or measured by scientific analysis. Caring, compassion, commitment, and nursing intuition must be demonstrated by each radiologic and imaging nurse to promote the highest level of care. The radiologic and imaging nurse must act as an advocate for the healthcare consumer in this highly technical, fast-paced environment. Radiologic and imaging nursing is an excellent professional role for a registered nurse. Opportunities to deliver complex specialty care in a diverse, ever-changing technical environment abound. Almost all healthcare consumers receive radiology and imaging services on an inpatient or outpatient basis. Radiologic and imaging nurses are there to make a difference in the healthcare consumer’s experience.
The Standards of Radiologic and Imaging Nursing Practice are authoritative statements of the duties that radiologic and imaging registered nurses, regardless of role, population, or specialty, are expected to perform competently. The standards published herein may serve as evidence of the standard of care, with the understanding that application of the standards depends on context. The standards are subject to change with the dynamics of the nursing profession, as new patterns of professional practice are developed and accepted by the nursing profession and the public. In addition, specific conditions and clinical circumstances may also affect the application of the standards at a given time.

The competencies that accompany each standard may be evidence of compliance with the corresponding standard. The list of competencies is not exhaustive. Whether a particular standard or competency applies depends upon the circumstances.
This page intentionally left blank
Standards of Practice for Radiologic and Imaging Nursing

Standard 1. Assessment
The radiologic and imaging registered nurse collects comprehensive data pertinent to the healthcare consumer's health and/or the situation.

COMPETENCIES
The radiologic and imaging registered nurse:

- Collects comprehensive data, including but not limited to physical, functional, psychosocial, emotional, cognitive, sexual, cultural, age-related, environmental, spiritual/transpersonal, and economic assessments, in a systematic and ongoing process while honoring the uniqueness of the person.

- Medical history:
  - Ability to lie flat without discomfort.
  - Ability to follow verbal instructions.
  - Allergies and type of allergic reaction, including nickel. For contrast allergy, include type of contrast, study, date, pre-medication used, and nature of reaction.
  - Renal function if the patient has risk factors related to renal impairment and is to receive IV contrast.
  - Adverse reactions to procedural sedation or anesthesia.
  - Obstructive sleep apnea (OSA) or BMI more than 40 with comorbidities.
  - Past experiences with pain medications and pain management; sedatives.
  - Falls risk.
- Use of complementary/alternative therapies, including herbals and supplements.

- **Surgical history:**
  - Pacemaker, cochlear implant, metal implants, implantable electronic devices of any sort
  - Recent surgeries
  - Organ transplants

- **Psychosocial/spiritual history:**
  - Significant other identified
  - Cultural considerations identified and addressed
  - Any past claustrophobia
  - Other past experiences that influence ability to relax or cooperate
  - Substance abuse history
  - Needle phobia (belonephobia)

- **Accidents or injuries:**
  - Metal fragments in the body, eye, or face (MRI)

- **Communicable disease:**
  - May require special environmental adjustments and scheduling

- **Safety:**
  - Risk of falls

- Elicits the healthcare consumer's values, preferences, expressed needs, and knowledge of the healthcare situation.

- Involves the healthcare consumer, family, and other healthcare providers, as appropriate, in holistic data collection.

- Identifies barriers (e.g., psychosocial, literacy, financial, cultural) to effective communication and makes appropriate adaptations.

- Recognizes the impact of personal attitudes, values, and beliefs.
Assesses family dynamics and impact on healthcare consumer health and wellness.

Prioritizes data collection based on the healthcare consumer’s immediate condition, or the anticipated needs of the healthcare consumer or situation.

Uses appropriate evidence-based assessment techniques, instruments, and tools.

Synthesizes available data, information, and knowledge relevant to the situation to identify patterns and variances.

Applies ethical, legal, and privacy guidelines and policies to the collection, maintenance, use, and dissemination of data and information.

Recognizes the healthcare consumer as the authority on his or her own health by honoring the healthcare consumer’s care preferences.

Documents relevant data in a retrievable format.

**ADDITIONAL COMPETENCIES FOR THE APRN**

The advanced practice registered nurse:

- Initiates and interprets diagnostic tests and procedures relevant to the healthcare consumer’s current status.

- Assesses the effect of interactions among individuals, family, community, and social systems on health and illness.
Standard 2. Diagnosis

The radiologic and imaging registered nurse analyzes assessment data to determine the diagnoses or issues.

COMPETENCIES

The radiologic and imaging registered nurse:

■ Derives the diagnoses or issues from assessment data.

■ Validates the diagnoses or issues with the healthcare consumer, family, and other healthcare providers when possible and appropriate.

■ Identifies actual or potential risks to the healthcare consumer’s health and safety, or barriers to health, which may include but are not limited to interpersonal, systematic, or environmental circumstances.

■ Uses standardized classification systems and clinical decision support tools, when available, in identifying diagnoses.

■ Documents diagnoses or issues in a manner that facilitates determination of the expected outcomes and plan.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

■ Systematically compares and contrasts clinical findings with normal and abnormal variations and developmental events in formulating a differential diagnosis.

■ Utilizes complex data and information obtained during interview, examination, and diagnostic processes in identifying diagnoses.

■ Assists staff in developing and maintaining competence in the diagnostic process.
Standard 3. Outcomes Identification

The radiologic and imaging registered nurse identifies expected outcomes for a plan individualized to the healthcare consumer or the situation.

COMPETENCIES

The radiologic and imaging registered nurse:

- Involves the healthcare consumer, family, healthcare providers, and others in formulating expected outcomes, when possible and appropriate.

- Derives culturally appropriate expected outcomes from the diagnoses.

- Considers associated risks, benefits, costs, current scientific evidence, expected trajectory of the condition, and clinical expertise when formulating expected outcomes.

- Defines expected outcomes in terms of ethical considerations, the healthcare consumer, and the healthcare consumer’s culture and values.

- Includes a time estimate for the attainment of expected outcomes.

- Develops expected outcomes that facilitate continuity of care.

- Modifies expected outcomes according to changes in the status of the healthcare consumer or evaluation of the situation.

- Documents expected outcomes as measurable goals.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Identifies expected outcomes that incorporate scientific evidence and are achievable through implementation of evidence-based practices.

- Identifies expected outcomes that incorporate cost and clinical effectiveness, healthcare consumer satisfaction, continuity, and consistency among providers.

- Differentiates outcomes that require care process interventions from those that require system-level interventions.
Standard 4. Planning

The radiologic and imaging registered nurse develops a plan that prescribes strategies and alternatives to attain the expected outcome.

COMPETENCIES

The radiologic and imaging registered nurse:

- Develops an individualized plan in partnership with the healthcare consumer’s characteristics and the situation, including but not limited to values, beliefs, spiritual and health practices, preferences, choices, developmental level, coping style, culture and environment, and available technology.

- Establishes the plan priorities in conjunction with the healthcare consumer, family, and others as appropriate.

- Includes strategies in the plan to address each of the identified diagnoses or issues. These strategies may include, but are not limited to, strategies for:
  - Promotion and restoration of health
  - Prevention of illness, injury, and disease
  - Alleviation of suffering
  - Supportive care

- Includes strategies for health and wholeness across the lifespan.

- Provides for continuity in the plan.

- Incorporates an implementation pathway or timeline in the plan.

- Considers the economic impact of the plan on the healthcare consumer, family, caregivers, and other affected parties.

- Integrates current scientific evidence, trends, and research.

- Utilizes the plan to provide direction to other members of the healthcare team.
• Explores practice settings and safe space and time for the nurse and the healthcare consumer to explore suggested, potential, and alternative options.

• Defines the plan to reflect current statutes, rules and regulations, and standards.

• Modifies the plan according to the ongoing assessment of the health-care consumer’s response and other outcome indicators.

• Documents the plan in a manner that uses standardized language or recognized terminology.

• Promotes patient safety through incorporation of National Patient Safety goals, including but not limited to:
  • Falls risk
  • Medication safety guidelines
  • Communication hand-off
  • Preprocedural pause
  • Patient identification
  • Infection prevention practices, including but not limited to infections that are:
    • Difficult to treat
    • Related to central lines
    • After surgery/invasive procedures

ADDITIONAL COMPETENCIES FOR THE APRN
The advanced practice registered nurse:

• Identifies assessment, diagnostic strategies, and therapeutic interventions in the plan that reflect current evidence, including data, research, literature, and expert clinical knowledge.

• Selects or designs strategies to meet the multifaceted needs of complex healthcare consumers.

• Includes a synthesis of healthcare consumers’ values and beliefs regarding nursing and medical therapies in the plan.
■ Leads the design and development of interprofessional processes to address the identified diagnosis or issue.

■ Actively participates in the development and continuous improvement of systems that support the planning process.
Standard 5. Implementation

The radiologic and imaging registered nurse implements the identified plan.

COMPETENCIES

The radiologic and imaging registered nurse:

- Partners with the healthcare consumer, family, significant others, and caregivers as appropriate to implement the plan in a safe, realistic, and timely manner, and to advocate for safe care that meets radiologic and imaging standards of care.

- Demonstrates caring behaviors toward healthcare consumers, significant others, and groups of people receiving care.

- Uses evidence-based interventions and treatments specific to the diagnosis or problem.

- Provides holistic care that addresses the needs of diverse populations across the lifespan.

- Advocates for health care that is sensitive to the needs of healthcare consumers, with particular emphasis on the needs of diverse populations.

- Applies appropriate knowledge of major health problems and cultural diversity in implementing the plan of care.

- Applies available healthcare technologies to maximize access and optimize outcomes for healthcare consumers.

- Utilizes community resources and systems to implement the plan.

- Collaborates with nursing colleagues and others to implement and integrate the plan.

- Utilizes technology to measure, record, and retrieve healthcare consumer data, implement the nursing process, and enhance nursing practice.

- Collaborates with healthcare team members to actively promote healthcare consumer safety, to identify barriers or threats to safe care, and to provide care that is safe and effective through the continuum of care.
- Accommodates different styles of communication used by healthcare consumers, families, and healthcare providers.

- Implements the plan in a timely manner in accordance with patient safety goals.

- Promotes the healthcare consumer’s capacity for the optimal level of participation and problem-solving.

- Documents implementation and any modifications, including changes or omissions, of the identified plan.

**ADDITIONAL COMPETENCIES FOR THE APRN**

The advanced practice registered nurse:

- Supports collaboration with the interprofessional team to implement the plan.

- Facilitates utilization of systems, organizations, and community resources to implement the plan.

- Use advanced communication skills to promote relationships between nurses and healthcare consumers, to provide a context for open discussion of the healthcare consumer’s experiences, and to improve healthcare consumer outcomes.

- Incorporates new knowledge and strategies to initiate change in nursing care practices if desired outcomes are not achieved.

- Assumes responsibility for the safe and efficient implementation of the plan.

- Actively participates in the development and continuous improvement of systems that support implementation of the plan.
Standard 5A. Coordination of Care

The radiologic and imaging registered nurse coordinates care delivery in a variety of settings, not just radiologic and imaging spaces.

COMPETENCIES
The radiologic and imaging registered nurse:

■ Organizes the components of the plan.

■ Manages the healthcare consumer’s care so as to maximize independence and quality of life.

■ Acts as a case manager to ensure that the healthcare consumer with multiple radiologic studies or interventions receives these in the most efficient manner.

■ Communicates with the healthcare consumer, family, and system during transitions in care.

■ Negotiates specialized care needs with the healthcare consumer, family, appropriate systems, outside agencies, and providers prior to radiologic intervention.

■ Documents the coordination of care.

■ Assists the healthcare consumer to identify options for alternative care.

■ Advocates for the delivery of dignified and humane care by the interprofessional team.

ADDITIONAL COMPETENCIES FOR THE APRN
The advanced practice registered nurse:

■ Provides leadership in the coordination of interprofessional health care for integrated delivery of healthcare consumer services.

■ Synthesizes data and information to prescribe necessary system and community support measures, including environmental modifications.

■ Coordinates system and community resources that enhance delivery of care across continua.
Standard 5B. Health Teaching and Health Promotion

The radiologic and imaging registered nurse employs strategies to promote health and a safe environment.

COMPETENCIES

The radiologic and imaging registered nurse:

- Provides health teaching that addresses such topics as healthy lifestyles, risk-reducing behaviors, developmental needs, activities of daily living, and preventive self-care.

- Provides healthcare consumer and family education specific to the imaging study, radiologic procedure, discharge plans, and care of an implanted device.

- Provides health teaching that ensures a safe environment through modality-specific prescreening and recognition of inherent risks associated with diagnostic and therapeutic imaging and procedures.

- Uses health promotion and health teaching methods appropriate to the situation and the healthcare consumer’s developmental level, learning needs, readiness and ability to learn, language preference, and culture.

- Seeks opportunities for feedback and evaluation of the effectiveness of the strategies used.

- Uses information technologies to communicate health promotion and disease prevention information to the healthcare consumer in a variety of settings.

- Provides healthcare consumers with information about intended effects and potential adverse effects of proposed therapies.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Synthesizes empirical evidence on risk behaviors, learning theories, behavioral change theories, motivational theories, epidemiology, and other related theories and frameworks when designing health information and healthcare consumer education.
- Designs health information and healthcare consumer education based on current scientific knowledge and research as appropriate to the healthcare consumer’s developmental level, learning needs, readiness to learn, and cultural values and beliefs.

- Evaluates health information resources, such as the Internet, in the area of practice for accuracy, readability, and comprehensibility to help healthcare consumers access quality health information.

- Provides anticipatory guidance to individuals, families, groups, and communities to promote health and prevent or reduce the risk of health problems.

- Educates healthcare consumers and their family members regarding new diagnoses, medications, indication, risks, and benefits of radiologic procedures.

- Engages consumer alliances and advocacy groups, as appropriate, in health teaching and health promotion activities.
Standard 5C. Consultation

The advanced practice registered nurse provides consultation to influence the identified plan, enhance the abilities of others, and effect change.

COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Synthesizes clinical data, theoretical frameworks, and evidence when providing consultation.
- Communicates consultation recommendations.
- Facilitates the effectiveness of a consultation by involving the health-care consumer and stakeholders in decision-making and negotiating role responsibilities.
Standard 5D. Prescriptive Authority and Treatment

The advanced practice registered nurse uses prescriptive authority, procedures, referrals, treatments, and therapies in accordance with state and federal laws and regulations.

COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Prescribes evidence-based treatments, therapies, and procedures considering the healthcare consumer’s comprehensive healthcare needs.

- Prescribes pharmacological agents based on a current knowledge of pharmacology and physiology.

- Prescribes specific pharmacological agents and treatments based on clinical indicators, the healthcare consumer’s status and needs, and the results of diagnostic and laboratory tests.

- Evaluates therapeutic and potential adverse effects of pharmacological and nonpharmacological treatments.

- Provides healthcare consumers with information about intended effects and potential adverse effects of proposed prescriptive therapies.

- Provides information about costs and alternative treatments and procedures, as appropriate.

- Manages side effects and/or adverse reactions of prescribed pharmacologic agents and treatment therapies, as appropriate.
Standard 6. Evaluation

The radiologic and imaging registered nurse evaluates progress toward attainment of outcomes.

COMPETENCIES

The radiologic and imaging registered nurse:

- Conducts a systematic, ongoing, and criteria-based evaluation of the outcomes in relation to the structures and processes prescribed by the plan and the indicated timeline.

- Collaborates with the healthcare consumer and others involved in the care or situation in the evaluative process.

- Evaluates, in partnership with the healthcare consumer, the effectiveness of the planned strategies in relation to the healthcare consumer, responses, and attainment of the expected outcomes.

- Disseminates results to the healthcare consumer and others involved in the care or situation, as appropriate, in accordance with state and federal laws and regulations.

- Uses ongoing assessment data to revise the diagnoses, outcomes, plan, and implementation as needed.

- Participates in assessing and assuring the responsible and appropriate use of interventions to minimize unwanted treatment and healthcare consumer suffering.

- Documents the results of the evaluation.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Evaluates the accuracy of the diagnosis and effectiveness of the interventions in relation to the healthcare consumer’s attainment of expected outcomes.

- Synthesizes the results of the evaluation to determine the effect of the plan on the healthcare consumer, families, groups, communities, and institutions.
- Adapts the plan of care for the trajectory of treatment according to evaluation of response.

- Uses the results of the evaluation analyses to make or recommend process or structural changes, including policy, procedure, or protocol revisions as appropriate.
Standards of Professional Performance for Radiologic and Imaging Nursing

**Standard 7. Ethics**

The radiologic and imaging registered nurse practices ethically.

**COMPETENCIES**

The radiologic and imaging registered nurse:

- Uses *Code of Ethics for Nurses with Interpretive Statements* (ANA, 2001) to guide practice.
- Delivers care in a manner that preserves and protects healthcare consumer autonomy, dignity, rights, values, and beliefs.
- Recognizes the centrality of the healthcare consumer and family as core members of any healthcare team.
- Upholds healthcare consumer confidentiality within legal and regulatory parameters.
- Assists healthcare consumers in self-determination and informed decision-making.
- Maintains a therapeutic and professional healthcare consumer–nurse relationship with appropriate professional role boundaries.
- Contributes to resolving ethical issues of healthcare consumers, colleagues, community groups, systems, and other stakeholders.
- Takes appropriate action regarding instances of illegal, unethical, or inappropriate behavior that could endanger or jeopardize the best interests of the healthcare consumer or situation.
- Speaks up when appropriate to question healthcare practice, when necessary for safety and quality improvement.
- Advocates for equitable healthcare consumer care.
ADDITIONAL COMPETENCIES FOR THE APRN
The advanced practice registered nurse:

■ Participates in interprofessional teams that address ethical risks, benefits, and outcomes.

■ Provides information on the risks, benefits, and outcomes of healthcare regimens to allow informed decision-making by the healthcare consumer, including informed consent and informed refusal.
Standard 8. Education

The radiologic and imaging registered nurse attains knowledge and competence that reflect current nursing practice.

COMPETENCIES

The radiologic and imaging registered nurse:

- Participates in ongoing educational activities related to appropriate knowledge bases and professional issues.
- Demonstrates a commitment to lifelong learning through self-reflection and inquiry to address learning and personal growth needs.
- Seeks experiences that reflect current practice in order to maintain and enhance knowledge, skills, judgment, clinical practice, and role performance.
- Acquires knowledge and skills appropriate to the specialty area, population, practice setting, role, or situation.
- Maintains professional records that provide evidence of competency and lifelong learning.
- Seeks experiences and formal and independent learning activities to maintain and develop clinical and professional skills and knowledge.
- Identifies learning needs based on nursing knowledge, the various roles of the nurse, and the changing needs of the population.
- Participates in formal or informal consultations to address issues in nursing practice as an application of education and knowledge base.
- Shares educational findings, experiences, and ideas with peers.
- Contributes to a work environment conducive to the education of healthcare professionals.
- Obtains and maintains professional certifications.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Uses current healthcare research findings and other evidence to expand clinical knowledge, skills, abilities, and judgment; to enhance role performance; and to increase knowledge of professional issues.
Standard 9. Evidence-Based Practice and Research

The radiologic and imaging registered nurse integrates evidence and research findings into practice.

COMPETENCIES

The radiologic and imaging registered nurse:

■ Utilizes the best available evidence, including research findings, to guide practice decisions.

■ Actively participates in research activities and formulation of evidence-based practice at various levels appropriate to the nurse’s level of education and position. Such activities may include:

■ Identifying clinical problems specific to nursing research (healthcare consumer care and nursing practice).

■ Participating in data collection (surveys, pilot projects, formal studies).

■ Participating in human subject protection activities, including informed consent.

■ Participating in a formal committee or program.

■ Sharing research activities and findings with peers and others.

■ Conducting research.

■ Critically analyzing and interpreting research for application to practice.

■ Using research findings in the development of policies, procedures, and standards of practice in healthcare consumer care.

■ Incorporating research as a basis for learning.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

■ Contributes to nursing knowledge by conducting or synthesizing research that discovers, examines, and evaluates knowledge, theories, criteria, and creative approaches to improve healthcare practice.

■ Disseminates research findings through activities such as presentations, publications, consultation, and journal clubs.

■ Promotes a climate of research and clinical inquiry.
Standard 10. Quality of Practice

The radiologic and imaging registered nurse contributes to quality nursing practice.

COMPETENCIES

The radiologic and imaging registered nurse:

- Demonstrates quality by documenting the application of the nursing process in a responsible, accountable, and ethical manner.
- Uses creativity and innovation to enhance nursing care.
- Participates in quality improvement. Activities may include:
  - Identifying aspects of practice important for quality monitoring.
  - Using indicators to monitor quality, safety, and effectiveness of nursing practice.
  - Collecting data to monitor quality and effectiveness of nursing practice.
  - Analyzing quality data to identify opportunities for improving nursing practice.
  - Formulating recommendations to improve nursing practice or outcomes.
  - Implementing activities to enhance the quality of nursing practice.
  - Developing, implementing, and/or evaluating policies, procedures, and guidelines to improve the quality of practice.
  - Participating on and/or leading interprofessional teams to evaluate clinical care or health services.
  - Participating in and/or leading efforts to minimize costs and unnecessary duplication.
  - Identifying problems that occur in day-to-day work routines in order to correct process inefficiencies.*

(* BHE.MONE, 2006.)
■ Analyzing factors related to quality, safety, and effectiveness.

■ Analyzing organizational systems for barriers to quality healthcare consumer outcomes.

■ Implementing processes to remove or weaken barriers within organizational systems.

ADDITIONAL COMPETENCIES FOR THE APRN
The advanced practice registered nurse:

■ Provides leadership in the design and implementation of quality improvements.

■ Designs innovations to effect change in practice and improve health outcomes.

■ Evaluates the practice environment and quality of nursing care rendered in relation to existing evidence.

■ Identifies opportunities for the generation and use of research and evidence.

■ Obtains and maintains professional certification if it is available in the area of expertise.

■ Uses the results of quality improvement to initiate changes in nursing practice and the healthcare delivery system.
Standard 11. Communication

The radiologic and imaging registered nurse communicates effectively in a variety of formats in all areas of practice.

COMPETENCIES

The radiologic and imaging registered nurse:

■ Assesses communication format preferences of healthcare consumers, families, and colleagues.

■ Assesses her or his own communication skills in encounters with healthcare consumers, families, and colleagues.*

■ Seeks continuous improvement of her or his own communication and conflict resolution skills.*

■ Conveys information to healthcare consumers, families, the interprofessional team, and others in communication formats that promote accuracy.

■ Questions the rationale supporting care processes and decisions when they do not appear to be in the best interest of the healthcare consumer.*

■ Discloses observations or concerns related to hazards and errors in care or the practice environment to the appropriate level.

■ Maintains communication with other providers to minimize risks associated with transfers and transition in care delivery.

■ Contributes her or his own professional perspective in discussions with the interprofessional team.

(*BHE.MONE, 2006.)
**Standard 12. Leadership**

The radiologic and imaging registered nurse demonstrates leadership in the professional practice setting and the profession.

**COMPETENCIES**

The radiologic and imaging registered nurse:

- Oversees the nursing care provided by others while retaining accountability for the quality of care given to the healthcare consumer.

- Abides by the vision, the associated goals, and the plan to implement and measure progress of an individual healthcare consumer or progress within the context of the healthcare organization.

- Mentors colleagues for the advancement of nursing practice, the profession, and quality healthcare.

- Treats colleagues with respect, trust, and dignity.*

- Develops communication and conflict resolution skills.

- Participates in professional organizations.

- Demonstrates a commitment to continuous, lifelong learning for self and others.

- Communicates effectively with the healthcare consumer and colleagues.

- Seeks ways to advance nursing autonomy and accountability.*

- Participates in efforts to influence healthcare policy involving healthcare consumers and the profession.

**ADDITIONAL COMPETENCIES FOR THE APRN**

The advanced practice registered nurse:

- Mentors other radiologic and imaging registered nurses and colleagues in the acquisition of clinical knowledge, skills, abilities, and judgment.

- Participates with interdisciplinary teams that contribute to role development and advanced nursing practice and health care.

(*BHE.MONE, 2006.)
- Participates in professional activities.

- Contributes to an environment that is conducive to clinical education of other healthcare providers and acts as teacher, mentor, and preceptor, as appropriate.

- Influences decision-making bodies to improve professional practice, environment, and healthcare consumer outcomes.

- Provides direction to enhance the effectiveness of the interprofessional team.

- Promotes advanced practice nursing and role development by interpreting its role for healthcare consumers, families, and others.

- Models expert practice to interprofessional team members and healthcare consumers.
Standard 13. Collaboration

The radiologic and imaging registered nurse collaborates with the healthcare consumer, family, and others in the conduct of radiologic and imaging nursing practice.

COMPETENCIES

The radiologic and imaging registered nurse:

- Partners with others to effect change and produce positive outcomes through the sharing of knowledge of the healthcare consumer and/or situation.
- Communicates with the healthcare consumer, the family, and health-care providers regarding healthcare consumer care and the nurse’s role in the provision of that care.
- Promotes conflict management and engagement.
- Participates in building consensus or resolving conflict in the context of healthcare consumer care.
- Applies group process and negotiation techniques with healthcare consumers and colleagues.
- Adheres to standards and applicable codes of conduct that govern behavior among peers and colleagues to create a work environment that promotes cooperation, respect, and trust.
- Cooperates in creating a documented plan focused on outcomes and decisions related to care and delivery of services that indicates communication with healthcare consumers, families, and others.
- Engages in teamwork and team-building processes.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Partners with other disciplines to enhance healthcare consumer outcomes through interprofessional activities such as education, consultation, management, technological development, or research opportunities.
Invites the contribution of the healthcare consumer, family, and team members in order to achieve optimal outcomes.

Leads in establishing, improving, and sustaining collaborative relationships to achieve safe, quality healthcare consumer care.

Documents plan-of-care communications, rationale for plan-of-care changes, and collaborative discussions to improve healthcare consumer outcomes.
Standard 14. Professional Practice Evaluation

The radiologic and imaging registered nurse evaluates her or his own nursing practice in relation to professional practice standards and guidelines, relevant statutes, rules, and regulations.

COMPETENCIES

The radiologic and imaging registered nurse:

- Provides age-appropriate and developmentally appropriate care in a culturally and ethnically sensitive manner.

- Engages in self-evaluation of practice on a regular basis, identifying areas of strength as well as areas in which professional growth would be beneficial.

- Obtains informal feedback regarding her or his own practice from healthcare consumers, peers, professional colleagues, and others.

- Participates in peer review as appropriate.

- Takes action to achieve goals identified during the evaluation process.

- Provides the evidence for practice decisions and actions as part of the informal and formal evaluation processes.

- Interacts with peers and colleagues to enhance her or his own professional nursing practice or role performance.

- Provides peers with formal or informal constructive feedback regarding their practice or role performance.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Engages in a formal process of seeking feedback regarding her or his own practice from healthcare consumers, peers, professional colleagues, and others.
Standard 15. Resource Utilization

The radiologic and imaging registered nurse utilizes appropriate resources to plan and provide nursing services that are safe, effective, and financially responsible.

COMPETENCIES

The radiologic and imaging registered nurse:

■ Assesses individual healthcare consumer care needs and resources available to achieve desired outcomes.

■ Identifies healthcare consumer care needs, potential for harm, complexity of the task, and desired outcome when considering resource allocation.

■ Delegates elements of care based on the needs and condition of the healthcare consumer, potential for harm, complexity of the task, and predictability of the outcome to appropriate healthcare workers in accordance with any applicable legal or policy parameters or principles.

■ Assists the healthcare consumer and family in becoming informed about the options, costs, risks, and benefits of treatment and care.

■ Identifies the evidence when evaluating resources.

■ Advocates for resources, including technology, that enhance nursing practice.

■ Modifies practice when necessary to promote positive interaction between healthcare consumers, care providers, and technology.

■ Assists the healthcare consumer and family in identifying and securing appropriate services to address needs across the healthcare continuum.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

■ Utilizes organizational and community resources to formulate interprofessional plans of care.

■ Formulates innovative solutions for healthcare consumer care problems that utilize resources effectively and maintain quality.

■ Designs evaluation strategies that demonstrate cost effectiveness, cost benefit, and efficiency factors associated with nursing practice.
Standard 16. Environmental Health

The radiologic and imaging registered nurse practices in an environmentally safe and healthy manner.

COMPETENCIES

The radiologic and imaging registered nurse:

- Attains knowledge of environmental health concepts, such as implementation of environmental health strategies.
- Promotes a practice environment that reduces environmental health risks for workers and healthcare consumers.
- Assesses the practice environment for factors that threaten health, such as radiation, improper containment of waste, sound, odor, noise, and light.
- Advocates for the judicious and appropriate use of products in healthcare.
- Communicates environmental health risks and exposure reduction strategies to healthcare consumers, families, colleagues, and communities.
- Utilizes scientific evidence to determine if a product or treatment is an environmental threat.
- Participates in strategies to promote healthy communities.

ADDITIONAL COMPETENCIES FOR THE APRN

The advanced practice registered nurse:

- Creates partnerships that promote sustainable environmental health policies and conditions.
- Analyzes the impact of social, political, and economic influences on the environment and human health exposures.
- Critically evaluates the manner in which environmental health issues are presented by the popular media.
- Advocates for implementation of environmental principles for nursing practice.
- Supports nurses in advocating for and implementing environmental principles in nursing practice.
Glossary

**ACR.** American College of Radiology.

**Advanced practice registered nurse (APRN).** A nurse who has completed an accredited graduate-level education program, preparing her or him for the role of certified nurse practitioner, certified registered nurse anesthetist, certified nurse-midwife, or clinical nurse specialist; has passed a national certification examination that measures the APRN role and population-focused competencies; maintains continued competence as evidenced by recertification; and is licensed to practice as an APRN. (Adapted from APRN JDG, 2008.)

**Adverse reaction.** The development of undesired side effects or toxicity caused by the administration of drugs or contrast media. May vary from mild and self-limiting to severe and life-threatening.

**Angiography.** Imaging used to visualize arteries and veins to diagnose and treat a variety of conditions; performed in an interventional setting often using contrast.

**Anxiolysis.** A drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilation and cardiovascular functions are unaffected.

**Anxiolytic.** Medication used for anxiolysis.

**ARIN.** Association for Radiologic and Imaging Nursing.

**ARNA.** American Radiological Nurses Association, renamed ARIN in 2008.
**ASRT.** American Society of Radiologic Technologists.

**Assessment.** A systematic, dynamic process by which the registered nurse, through interaction with the patient, family, groups, communities, populations, and healthcare providers, collects and analyzes data. Assessment may include the following dimensions: physical, psychological, sociocultural, spiritual, cognitive, functional abilities, developmental, economic, and lifestyle.

**Autonomy.** The capacity of a nurse to determine her or his own actions through independent choice, including demonstration of competence, within the full scope of nursing practice.

**AVIR.** Association of Vascular and Interventional Radiographers.

**Biopsy.** Sampling of tissue for diagnosis of medical condition which may be performed under a variety of imaging modalities.

**Breast imaging.** Imaging used to visualize anatomy of the breast and surrounding structures; includes mammography, ultrasound, and magnetic resonance imaging (MRI).

**Cardiac catheterization.** Angiography procedure that focuses on examination and intervention for the heart and coronary blood vessels.

**Caregiver.** A person who provides direct care for another, such as a child, dependent adult, the disabled, or the chronically ill.

**Central venous access.** A minimally invasive procedure involved in accessing the circulatory system (artery or vein), often to place a device for therapy.

**Cerebral embolization.** The intentional occlusion of a blood vessel in the brain to achieve a therapeutic benefit such as control of bleeding or decreasing blood supply to a tumor.

**Code of Ethics (nursing).** A list of provisions that makes explicit the primary goals, values, and obligations of the nursing profession and expresses its values, duties, and commitments to the society of which it is a part. In the United States, nurses abide by and adhere to the *Code of Ethics for Nurses with Interpretive Statements* (ANA, 2001).
Collaboration. A professional healthcare partnership grounded in a reciprocal and respectful recognition and acceptance of: each partner’s unique expertise, power, and sphere of influence and responsibilities; the commonality of goals; the mutual safeguarding of the legitimate interest of each party; and the advantages of such a relationship.

Competency. An expected and measurable level of nursing performance that integrates knowledge, skills, abilities, and judgment, based on established scientific knowledge and expectations for nursing practice.

Computed tomography (CT). Imaging modality using a collimated beam of rotating X-rays and computer processing to provide images of body structures. CT images are called “slices” and can be viewed two- or three-dimensionally.

Continuity of care. An interprofessional process that includes healthcare consumers, families, and other stakeholders in the development of a coordinated plan of care. This process facilitates the patient’s transition between settings and healthcare providers, based on changing needs and available resources.

Contrast media. A substance used in imaging modalities to increase the “contrast” or enhance the distinction of a body structure.

Contrast-induced allergies. Allergic reaction precipitated by infusion or ingestion of contrast media.

CRN. Certified Radiologic Nurse.

Delegation. The transfer of responsibility for the performance of a task from one individual to another while retaining accountability for the outcome. Example: The RN, in delegating a task to an assistive individual, transfers the responsibility for the performance of the task but retains professional accountability for the overall care rendered.

Diagnosis. A clinical judgment about a healthcare consumer’s response to actual or potential health conditions or needs. The diagnosis provides the basis for determination of a plan to achieve expected outcomes. Registered nurses utilize nursing and medical diagnoses, depending upon educational and clinical preparation and legal authority.
**Diagnostic imaging.** Use of radiologic imaging to provide information for the diagnosis of a medical disease or condition.

**Diagnostic testing.** Providing information for the diagnosis of a medical disease or condition.

**Electrophysiology.** The study of electrical activity and its effects on the body.

**Environment.** The surrounding context, milieu, conditions, or atmosphere in which a registered nurse practices.

**Environmental health.** Aspects of human health, including quality of life, that are determined by physical, chemical, biological, social, and psychological problems in the environment. It also refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially adversely affect the health of present and future generations.

**Evaluation.** The process of determining the progress toward attainment of expected outcomes, including the effectiveness of care.

**Evidence-based practice.** A scholarly and systematic problem-solving paradigm that results in the delivery of high-quality health care.

**Expected outcomes.** End results that are measurable, desirable, and observable, and translate into observable behaviors.

**Family.** Family of origin or significant others as identified by the healthcare consumer.

**Fluoroscopy.** Imaging using X-ray to produce images; may involve continuous images to visualize motion and function of internal body structures.

**Gastroenterology.** A medical specialty involving the function and treatment of conditions of the stomach, intestines, and related structures.

**Health.** An experience that is often expressed in terms of wellness and illness, and may occur in the presence or absence of disease or injury.
Healthcare consumer. The person, client, family, group, community, or population who is the focus of attention and to whom the registered nurse is providing services as sanctioned by the state's regulatory bodies.

Healthcare providers. Individuals with special expertise who provide healthcare services or assistance to healthcare consumers (patients). They may include nurses, physicians, psychologists, social workers, nutritionists/dietitians, and various therapists.

Hybrid procedural suite. Interventional radiology environment that incorporates more than one imaging modality, such as MRI and fluoroscopy.

Illness. The subjective experience of discomfort.

Imaging. A method of visualizing body structures and function for diagnosis, intervention, and treatment of medical conditions.

Implementation. Activities such as teaching, monitoring, providing, counseling, delegating, and coordinating.

Inferior vena cava filter. A device designed to trap blood clots that is placed in the inferior vena cava.

Information. Data that are interpreted, organized, or structured.

Interprofessional. Reliant on the overlapping knowledge, skills, and abilities of each professional team member. This type of action can drive synergistic effects by which outcomes are enhanced and become more comprehensive than a simple aggregation of the individual efforts of the team members.

Intervention. Any measure applied to alter, modify, or prevent a medical condition or disease.

Interventional radiology. Radiologic imaging used for performing minimally invasive procedures for the purpose of diagnosis, tissue sampling, device placement, or treatment of conditions.
Lithotripsy. Use of high-energy shock waves or laser to treat calculus (stones) in the urinary system or gallbladder; may be performed surgically or noninvasively.

Magnetic resonance imaging (MRI). Imaging performed using magnetic fields to provide detailed images of body structures and functions, and to suggest possible interventional procedures.

Mammography. The study of the breast using X-ray. The images are called mammograms.

Minimally invasive procedures. Treatment of medical conditions using imaging, devices, and techniques that cause minor trauma to the body. Examples of minimally invasive procedures include angiography, percutaneous drainage tubes, and central venous access insertion.

Modalities. In radiology, a method or technique of imaging that has unique characteristics. Examples of modalities include MRI, CT, ultrasound, X-ray, and interventional.

Nephrotoxicity. The quality of being destructive or toxic to the kidney.

Nuclear medicine (NM). Imaging studies conducted using radiographic tracers (isotopes) inhaled, ingested, or injected and imaged using gamma cameras or positron emission tomography (PET) scanners for diagnosis or treatment of medical conditions.

Nursing. The protection, promotion, and optimization of health and abilities; prevention of illness and injury; alleviation of suffering through the diagnosis and treatment of human response; and advocacy in the care of individuals, families, communities, and populations.

Nursing practice. The collective professional activities of nurses, characterized by the interrelations of human responses, theory application, nursing actions, and outcomes.

Nursing process. A critical thinking model used by nurses, comprised of the integration of the singular, concurrent actions of six components:
assessment, diagnosis, identification of outcomes, planning, implementation, and evaluation.

**Oncologic treatments.** Management, interventions, and therapy focused on cancer.

**Patient.** See *healthcare consumer*.

**Peer review.** A collegial, systematic, and periodic process by which registered nurses are held accountable for practice and which fosters the refinement of a nurse's knowledge, skills, and decision-making at all levels and in all areas of practice.

**Percutaneous drainage tubes.** Devices used in a minimally invasive procedure in which a catheter (tube) is inserted through the skin to drain fluid from various structures or regions of the body.

**Pharmacologic stress testing.** Cardiac testing that involves nuclear medicine imaging after a heart has been subjected to stress using a medication that causes vasodilation of cardiac vessels.

**Plan.** A comprehensive outline of the components that must be addressed to attain expected outcomes.

**Positron emission tomography (PET).** An imaging modality that involves tracking a radioactive substance inside the body for diagnosis of a medical condition. PET uses a combination of computed tomography and scintillation scanning to form images.

**Procedural sedation.** Use of medications to reduce pain and/or anxiety for the completion of a procedure conducted in imaging modalities such as MRI, CT, and interventional radiology.

**Procedures.** Minimally invasive and noninvasive techniques used to accomplish a treatment or intervention.

**Quality.** The degree to which health services for patients, families, groups, communities, or populations increase the likelihood of desired outcomes and are consistent with current professional knowledge.
Radiation. The emission, transmission, or absorption of electromagnetic or radiant energy in the form of particles, waves, or rays.

Radiation exposure. An amount of radiation as measured by the unit Roentgen. Radiation exposure is measured for radiology staff who are regularly exposed to radiation sources at work.

Radiation oncology. The study, diagnosis, and treatment of cancer using ionizing radiation.

Radiation protection. Techniques, devices, and barriers used to reduce exposure to radiation.

Radioactive. Exhibiting radioactivity, as with nuclear medicine isotopes.

Radioactivity. Emission of radiation from a substance due to decay of the nuclei of unstable elements.

Radiologic/radiological. Relating to or concerning the medical field of radiology.

Radiologist. A physician who specializes in radiology. A certified radiologist is tested and approved by the American Board of Radiology.

Radiology. Field of medicine in which imaging and interventional procedures are used to diagnose and treat medical conditions. The field includes modalities such as MRI, CT, fluoroscopy, PET, nuclear medicine, mammography, and ultrasound.

Radium. A radioactive element used as a source of gamma rays which are capable of penetrating matter and creating images, such as X-rays. Radium may also be used in cancer-treating radiation therapy.

Registered nurse (RN). An individual registered or licensed by a state, commonwealth, territory, government, or other regulatory body to practice as a registered nurse.

RNCB. Radiologic Nursing Certification Board.
**RSNA.** Radiological Society of North America.

**Scope of Nursing Practice.** The description of the who, what, where, when, why, and how of nursing practice that addresses the range of nursing practice activities common to all registered nurses. When considered in conjunction with the Standards of Professional Nursing Practice and the Code of Ethics for Nurses, comprehensively describes the competent level of nursing common to all registered nurses.

**Sedation.** A drug-induced depression of consciousness during which patients can independently maintain ventilatory function. Sedation ranges from minimal to deep.

**SIR.** Society of Interventional Radiology.

**Standards.** Authoritative statements defined and promoted by the profession by which the quality of practice, service, or education can be evaluated.

**Standards of Practice.** Authoritative statements describing a competent level of nursing care as demonstrated by the nursing process. See also nursing process.

**Standards of Professional Nursing Practice.** Authoritative statements of the duties that all registered nurses, regardless of role, population, or specialty, are expected to perform competently.

**Standards of Professional Performance.** Authoritative statements describing a competent level of behavior in the professional role.

**Stroke interventions.** Interventional radiology that uses imaging, medication, and devices to diagnose and treat both ischemic and thrombolytic events in the brain.

**Technologist.** Person trained and skilled in the practice of radiology imaging. Technologists may train and practice in specific modalities.

**Therapeutic imaging.** Imaging pertaining to treatment of a disease or medical condition.
**Thrombolytic agents.** Medications used to dissolve or destroy a thrombus (stationary clot in the vascular system).

**Ultrasound.** Imaging modality that uses sound waves to produce images of body structures and function.

**Vascular.** Consisting of and/or pertaining to the blood vessels, which include veins, arteries, and associated structures in the body.

**Vascular occlusions.** Blockages of the vascular system.

**X-rays.** Type of radiation discovered in 1895 by Wilhelm Roentgen; also, an image or radiograph produced by a beam of electromagnetic radiation that penetrates body tissue and is captured on an imaging surface.
References and Bibliography


Appendix A.

Radiology Nursing: Scope and Standards of Practice (2007)
The content in this appendix is not current and is of historical significance only.


Radiology Nursing: Scope and Standards of Practice

AMERICAN NURSES ASSOCIATION

Silver Spring, Maryland

2007
ACKNOWLEDGMENTS

This document was developed by the American Radiological Nurses Association (ARNA) Scope and Standards Revision Task Force. The members of the Task Force gratefully acknowledge the work of others who developed the initial standards of radiological nursing practice published by ARNA in 1998 and those who developed and reviewed drafts of this document.

**ARNA Scope and Standards Revision Task Force**
- Delma Armstrong, BSN, RN, CRN
- Teresa Bateman, RN, CRN
- Melissa Holbrook, MSN, RN, NP-C
- Cindy Sanders, MSN, RN
- Leslie Schmidt, MS, RN, CS, NP-C
- Paulette Snoby, MPA, BSN, RN, CCRN
- Kathy Scheffer, MN, RN, CRN

**ARNA Staff**
- Belinda E. Puetz, PhD, RN
- Harriet McClung, BA

**ARNA Board of Directors 2003–2004**
- Kate Little, RN, President
- Delma Armstrong, BSN, RN, President-elect
- Kathleen Gross, MSN, RN, BC, CRN, Immediate Past President
- Sophia Jan, BSN, RN, Treasurer
- Kathy Scheffer, BSN, RN, CRN, Secretary
- Barbara Sargent, MBA, BSN, RN, Director
- Paulette Snoby, MPA, BSN, RN, CCRN, Director
- Rhonda Caridi, RN, CRN, Director

**ARNA Board of Directors 2004–2005**
- Delma Armstrong, BSN, RN, CRN, President
- Paulette Snoby, MPA, BSN, RN, CCRN, President-elect
- Kate Little, RN, Immediate Past President
- Sophia Jan, BSN, RN, Treasurer
- Kathy Scheffer, MN, RN, CRN, Secretary
- Debra Beach, MS, APRN-BC, Director
- Rhonda Caridi, RN, CRN, Director
- Patrick Glickman, BSN, RN
CONTENTS

Acknowledgments iii

Scope of Radiology Nursing Practice 1
Foundation 1
History of Radiology and Radiology Nursing 1
Populations Served 4
Practice Settings 4
Definition and Description of Radiology Nursing 5
Radiology Nurse Practice Levels 8
  Radiology Nurse Generalist 9
  Radiology Advanced Practice Registered Nurse 11
Certification 12
Issues and Opportunities 12
Summary 13

Standards of Radiology Nursing Practice 15

Standards of Practice 15
Standard 1. Assessment 15
Standard 2. Diagnosis 17
Standard 3. Outcomes Identification 18
Standard 4. Planning 20
Standard 5. Implementation 22
  Standard 5a. Coordination of Care 23
  Standard 5b. Health Teaching and Health Promotion 24
  Standard 5c. Consultation 25
  Standard 5d. Prescriptive Authority and Treatment 26
Standard 6. Evaluation 27

Standards of Professional Performance 29
Standard 7. Quality of Practice 29
Standard 8. Education 31
Standard 9. Professional Practice Evaluation 32
Standard 10. Collegiality 33
Standard 11. Collaboration 34
Standard 12. Ethics 35
Standard 13. Research 36
Appendix A. Radiology Nursing: Scope and Standards of Practice (2007)

The content in this appendix is not current and is of historical significance only.

Standard 14. Resource Utilization 37
Standard 15. Leadership 38

References 41
Index 43
SCOPE OF RADIOLOGY NURSING PRACTICE

Foundation
Radiology nursing is an exciting and dynamic specialty that combines cutting-edge technology with the art and science of nursing. Visualization of human anatomy and physiology, and a detailed view of the pathophysiology of many disease processes, create a unique practice setting. It is the blending of the nursing commitment to high-quality patient care with compassion for the human condition in this highly technological environment that makes radiology nursing unique.

History of Radiology and Radiology Nursing
Wilhelm Conrad Roentgen, a professor of physics at the University of Würzburg, Germany, discovered X-rays by accident in 1895, hence the name X-ray for the unknown. His inadvertent creation of an image on a glass plate while a cathode ray tube was active was a major breakthrough. For the first time, scientists could see structures under the skin. For this discovery, Roentgen won the first Nobel Prize for Physics in 1901. Other early scientists who helped lay the foundation of radiology were Antoine-Henri Becquerel, who discovered the radioactivity of uranium, and Marie and Pierre Curie with their isolation of radium. These three shared the 1903 Nobel Prize for Physics. It would be another 15 years before this knowledge would be used in medicine.

The field of radiology, which exploits short-wavelength electromagnetic radiation that can penetrate matter—the X-ray—has evolved over the years with many technological advancements and an arsenal of imaging modalities. These unique imaging modalities have led to specialties in the radiology field. The use of ultrasound waves, magnetic fields, computer enhancement, and injectable radioactive substances has created other means to diagnose and treat disease processes and further advance the ability to understand the human condition.

Radiation has been studied extensively, and research on its effects, its usefulness, and its dangers continues. This technological progress has placed new demands on healthcare workers and increased the need for
highly trained radiologists, nurses, and technologists working as a team to ensure patient safety.

Acknowledgment of the uniqueness of the practice setting and the specialized body of knowledge required to care for patients in this arena led to the foundation of the American Radiological Nurses Association (ARNA). In 1980, the call went out in RN Magazine for radiology nurses to organize. The following year 35 radiology nurses from 15 states met in conjunction with the 67th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA). In November, to advance their practice and institute standards of care, they established the American Radiological Nurses Association.

Partnering with RSNA was a strategic move for ARNA; it allowed the nurses to share speakers and facilities with the medical community for their educational venues. ARNA also sought recognition from other nursing organizations and soon joined the Nursing Organization Liaison Forum/National Federation of Specialty Nursing Organization (NOLF/NFSNO). This allowed ARNA to have a voice in specialty nursing issues. ARNA was also recognized by the American Nurses Association (ANA) as a specialty nursing association. In reaction to the nursing shortage of the 1990s, NOLF/NFSNO dissolved and reformed as the Nursing Organizations Alliance. ARNA has been represented at each meeting of this new organization.

Another influence on the growth and development of radiological nursing was the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). JCAHO mandates prompted the organization of radiology departments, to the advantage of radiology nurses. JCAHO wanted to see patients receive the same level of care in diagnostic and procedure areas that they would receive in the inpatient unit. Procedural sedation also became a major patient safety focus in the late 1990s. JCAHO also wanted to see nurses directly supervised by nurses. This led to more radiology nurses and more supervision by nurses with radiology experience. Many hospitals had to manage this requirement creatively by cross-training perianesthesia care units (PACUs) and transport nurses to cover radiology areas when required.

More external changes in reimbursement through Diagnostic Related Groupings (DRGs) and Medicare, with private insurance following closely, meant that procedures formerly considered surgical and requiring hospitalization were re-conceived as minimally invasive procedures that
could be performed on outpatients in the radiology department. Smaller incisions, less pain, and shorter recovery times led radiology in a new direction. Inferior vena cava (IVC) filters, internal ureteral stenting, percutaneous drainage tubes, central venous access for dialysis, and oncologic treatments were a few of the innovative procedures that emerged.

Technological advances and organizational changes expanded the role of the radiology nurse to meet the demands of patient care and safety in the radiology department. Just as surgical patients receive nursing intervention early in their hospital stays, patients undergoing care in the radiology department require the radiology nurse’s attention and care from the time a test or procedure is requested until the patient is discharged.

These changes in the practice setting, and growing awareness of the unique and specialized knowledge needed to perform competently there, led ARNA to produce its first certification exam in 1998. Core Curriculum for Radiological Nursing (Morgan & Nunnelee, 1999) soon followed to serve as a guide for nurses coming into this new field of practice.

With the new millennium came increased emphasis on organizational development and change. ARNA recruited a management company experienced in nursing organizations of various sizes. Many changes were made to streamline the work of the organization and to best use ARNA’s resources. In 2002 ARNA was accredited as a Provider Unit by the ANCC Commission on Accreditation.

This commitment to the core ideology that led to the formation of ARNA continues to this day and is reflected in the mission of ARNA: To foster the growth of radiology nurses who advance the standard of care.

ARNA’s core values—the essential and enduring principles that guide an organization—are found in its strategic plan formulated in 2004:

- Commitment to professionalism
- Responsiveness to technological advances
- Commitment to being the leaders in a constantly evolving environment

The ARNA strategic plan also includes a long-term goal for the association: to be the source for standards of nursing care in any imaging environment. These standards of radiology nursing practice have been formulated to achieve that goal.
Populations Served

Radiology patients range in age from newborn to geriatric; they may present with actual or potential alterations in health status in one or more body systems. The radiology nurse knows that patients may also experience accompanying mental, emotional, or spiritual distress. Radiology nurses are skilled in the initial treatment of alterations that may result from radiology procedures. These alterations may include contrast-induced allergies, changes in hemodynamic status, complications from procedural sedation, or a variety of other side effects. Radiology nurses diagnose and treat the range of human responses within their practice settings, scope of licensure, and available resources. Radiology nurses prioritize patient care activities based on patient acuity, risk factors, safety needs, the urgent or expedient nature of the procedure, and available resources. Radiology nurses serve their community as parish nurses, by teaching breast self exams, by advocating for early screening mammograms for high risk patients, and as partners in the Society of Interventional Radiologists “Legs for Life” peripheral vascular screening program.

Practice Settings

The practice setting offers unique challenges to radiology nursing. Radiology nursing practice takes place in settings which range across the continuum of care: inpatient and outpatient facilities in hospitals varying in size from small community facilities to university medical centers; same-day or limited-stay facilities; freestanding outpatient centers; and ambulatory radiology clinics.

Radiology is a high-volume specialty in which rapid throughput is desirable. Because of this rapid pace, radiology nurse–patient interactions may be single or multiple brief encounters. Radiology nurses work in practice settings in which there are often simultaneous demands competing for their services. This requires the radiology nurse to partner with other clinical nurses to ensure patient safety and appropriate care. This may include the use of the Perianesthesia Care Unit (PACU) for recovery from procedural sedation or the Intensive Care Unit (ICU) for close follow-up monitoring after renal artery angioplasty or arterial thrombolysis.
The radiology nurse's activities vary depending on the practice setting and the nursing staff available. In smaller facilities one nurse may cover all the patient care needs of the department, while larger facilities may employ an entire department of nurses. Patient advocacy and education are prime responsibilities of the nurse, whether a staff of one or many. Coordination of care with other healthcare team members is essential for a successful patient encounter. This encounter often begins with a phone call from the radiology nurse to the patient at home before a scheduled procedure. This call enables the nurse to screen the patient clinically, ensure that the patient and family understand the procedure, and answer their questions.

Definition and Description of Radiology Nursing

Radiology nursing is the assessment, care planning, and direct care of patients before, during, and after diagnostic and therapeutic imaging procedures. Radiology nurses always advocate for patients; they are frequently the voice of those unable to speak for themselves. Safety of the patient, as well as of the staff, is a primary concern.

Protocols and patient guidelines are based on best evidence-based practice. Such research is ongoing and performed in conjunction with other radiological organizations such as the American College of Radiology (ACR) and the American Society of Radiology Technologists (ASRT). Research is continuing to seek the best method to decrease the nephrotoxicity of contrast agents in high-risk patients. For example, studies have shown that contrast allergies are not positively linked to shellfish allergies as previously believed. Prescreening patients at risk is a major role of the radiology nurse, and staying current in the most recent research will ensure patient safety.

Radiology nurses influence patient care in a variety of settings, and the nursing roles in radiology may be as diverse as the specialty itself. Nurses may be employed as administrators, nursing recruiters, educators, performance improvement or risk management specialists, and marketers. Subspecialty areas include diagnostic imaging, vascular and interventional procedures (sometimes called special procedures), computed tomography scanning, nuclear medicine including positron emission tomographic (PET) scanning, ultrasound, magnetic resonance
imaging, breast imaging, radiation oncology, lithotripsy, cardiac catheterization, and related research, education, marketing, and consulting areas.

Radiology nurses work with and teach student nurses, residents, and medical students as they rotate through radiology. Many institutions include radiology nursing as a permanent part of new nurse orientation and have created nursing guides to radiology procedures to aid staff nurses in planning patient care.

Advanced practice nurses have a place in radiology practice whether assisting in clinic evaluations, conducting research, or performing follow-up care for patients who have undergone complex invasive procedures.

In accordance with Nursing’s Social Policy Statement (ANA, 2003), radiology nurses address issues of health and wellness with patients during therapeutic and interventional procedures in the radiology department. They work within institutional and other constraints to ensure that the nursing care they provide is of the highest quality and is targeted toward the needs of individual patients.

Radiology nursing continues to advance as a specialty area of practice with a distinct body of knowledge that is increasingly evidence-based. It bases its ethics on Code of Ethics for Nurses with Interpretive Statements (ANA, 2001). The radiology nurse adhering to this professional code acknowledges the patient’s right to privacy and confidentiality, to be informed, and to be treated with dignity. Furthermore, the radiology nurse recognizes the patient as a unique individual who is part of a structure that involves family, community, and society.

Both the registered radiology nurse and the advanced practice radiology registered nurse respect the patient’s cultural beliefs, acknowledge the patient’s diversity, and honor the patient’s individuality. In this way, these nurses ensure that the care they provide is non-judgmental and non-discriminatory, regardless of the patient’s characteristics or attributes, such as religion or lifestyle.

The radiology nurse serves as a patient advocate and helps the patient to make decisions regarding health care. In the radiology environment, radiology nurses promote professional ethics on their part and on the part of those with whom they work (e.g., radiologists, radiology technicians, other radiology nurses). Radiology nurses also promote their own professional integrity and that of others.
The scope of radiology nursing practice is guided by federal and state laws and regulations, clinical research, the code of ethics (ANA, 2001), best practices that are evidence-based, professional organizations, standards of practice (ANA, 2004), and position statements and guidelines developed by ARNA and other specialty organizations, such as the Association of periOperative Registered Nurses (AORN).

Radiology nurses require specialized knowledge and clinical skills to deal with the possible effects of radiological interventions on patients from infants to the elderly. In addition to standard nursing education and clinical experience, a greater understanding of the following subjects facilitates radiology nursing practice:

- Adaptation and change process
- Coping mechanisms
- Cultural and spiritual diversity
- Growth and development, to include both pediatric and elder care
- Human sexuality
- Communication skills
- Therapeutic use of self
- Patient advocacy
- Safety
- Infection control principles and practices
- Informed consent
- Radiation safety principles and practices
- Stages of pregnancy and fetal development, and risks of radiation exposure
- Radiological emergencies and appropriate initial interventions
- Procedural sedation: risks, benefits, complications, and reversal agents
- Pain control and symptom management
- Positioning for optimum comfort, radiation protection, and procedural needs
Radiology and Imaging Nursing: Scope and Standards of Practice

The content in this appendix is not current and is of historical significance only.

Appendix A. Radiology Nursing: Scope and Standards of Practice (2007)

- Risks and complications associated with contrast media administration
- Preparation for individual procedures, educating and screening for these procedures
- Risks and complications associated with procedures
- Technological advances that affect patient care and departmental operations

Radiology nurses use the nursing process in planning for and providing care to patients undergoing diagnostic and therapeutic imaging procedures. The nursing process includes assessment, diagnosis, identifying outcomes, creating a plan of care, implementing the plan of care, and evaluating the effectiveness of interventions based on patient responses. The plan of care addresses age-appropriate, developmentally appropriate, culturally appropriate, family-centered, and environmentally sensitive issues. Radiology nursing roles include, but are not limited to, patient advocate, care coordinator, caregiver, role model, educator, resource person, consultant, communication liaison, manager, administrator, and researcher. Radiology nurses serve as part of an interdisciplinary team that includes radiologists, radiological technologists, primary care physicians, inpatient and home health nurses, the patient and family members, and others. Radiology nurses focus on the patient and the patient’s responses to radiological interventions or physiologic changes while in the radiology department or under the care of the radiologist or radiology nurse.

Radiology Nurse Practice Levels

Radiology nursing is diverse and dynamic. Radiology nurses assume roles based on basic nursing preparation and scope of practice as determined by licensure, specialized informal and formal education, clinical experience, interest, talent, personal experience, and the nature of the patient population. Radiology nurses may be generalists or advanced practice nurses who work in various healthcare settings. At the current time, registered nurses with a Diploma, Associate degree, Baccalaureate, or Master of Science in Nursing practice in radiology settings. Licensed practical or vocational nurses also practice in some radiology settings within the more limited scope of their licensure.
Radiology Nurse Generalist

The radiology nurse generalist is a licensed registered nurse who demonstrates clinical skills and knowledge in radiology nursing and imaging technologies. The radiology nurse generalist should possess the basic knowledge and skills to complete activities such as the following:

- Apply appropriate theory and evidence-based practice as the basis for decision-making in radiology nursing practice.
- Use nursing and radiology procedural knowledge to anticipate and plan for patient care needs in the radiology environment. The radiology nurse is expert in assessing and treating anxiety, pain, claustrophobia, and underlying disease conditions (they care for GI bleeders, patients with pulmonary emboli, seizure disorders, cardiac disease, acute gallbladder or hepatic conditions, and renal obstruction).
- Provide expert care related to tubes and devices located in the radiology department. The radiology nurse knows the potential risks and complications from radiology procedures and can assist in the initial treatment of adverse effects particularly associated with contrast media administration and in the treatment of these complications.
- Understand the pharmacology of medications and recognize special considerations related to drugs and pharmacologic agents rarely used in other areas—for example, cholecysteine, arterial nitroglycerine infusions for venous spasm, intravenous glucagons to reduce peristalsis during gastric procedures, procedural sedation which evolves into mild and moderate sedation, pain and anxiolytic medications for immediate and long-term relief, adenosine and dobutamine for cardiac pharmacologic stress testing, and diuretics and other cardiac beta blockers used to facilitate diagnostic testing.
- Understand and apply radiation safety principles and serve as a resource to other healthcare personnel on radiology patient care.
- Facilitate a multidisciplinary approach that enhances continuity of care and patient care outcomes by collaborating with other healthcare providers. This includes delegating appropriate aspects of patient care to qualified personnel. The radiology nurse has expanded the radiology team:
Radiologist + Radiology Technologist (RT) = Partnership
Radiologist + RT + RN = Team

This requires a reorientation of the radiology department, primarily facilitated by the addition of nursing to the team. The radiology nurse is an essential specialist and resource who enhances both patient and department outcomes.

• Assist in identification of pertinent issues such as patient care, safety, and infection control and provide informal and formal education on these issues to radiology staff. The radiology nurse is essential to developing and implementing ongoing performance improvement processes.

• Participate in evaluation processes to enhance professional performance, including peer review. The radiology nurse must assume personal responsibility for continuing education and professional growth.

• Understand the research process, be able to participate in data collection, and incorporate pertinent findings into practice. As interventional and research efforts increase, nurses move into positions of responsibility supporting these efforts, recruiting and following subjects, and coordinating studies.

The nursing process is a systematic, deliberate problem-solving approach to meeting the health care and nursing needs of patients)—assessment, diagnosis, planning, implementation, evaluation, outcomes identification—has expanded the ability of the radiology department to assess the impact of changes in policy and personnel, and has helped put the patient first in the priorities of the department. The use of the nursing process for patients undergoing diagnostic and therapeutic imaging procedures includes:

• Collection of ongoing data
• Synthesis and analysis of data to determine outcomes
• Development of an age-appropriate plan of care
• Implementation of the nursing plan
• Evaluation of the patient’s responses to the plan
• Reassessment and revision of the plan and goals as indicated
Radiology nurses are the primary patient advocates in the radiology department; they often speak for patients who cannot speak for themselves, they protect the patients’ privacy and dignity, and they ensure focus on the patient. That is, they provide nursing care. They also are attuned to the language, ethnic, religious, and sexual diversity of patients.

Such a role helps maintain patient confidentiality while communicating pertinent clinical data. The nurse must also provide health education and procedural teaching to patients and significant others before, during, and after procedures. Radiology nurses must possess excellent communication skills. Positive personal interactions and flexibility are key to providing clear instruction and communication with patients and family members as well as other members of the radiology team.

Radiology Advanced Practice Registered Nurse

The radiology advanced practice registered nurse has a master’s or doctoral degree and has been recognized and credentialed as an advanced practice registered nurse in the state in which they practice.

The increasing severity and complexity of patient illnesses in acute care settings drive the development of advanced radiology nursing roles as the specialty continues to evolve and more radiology nurses attain graduate degrees. The radiology advanced practice registered nurse may function in a variety of roles and settings that include, but are not limited to, the following: clinician, supervisor, administrator, educator, consultant, researcher, performance improvement specialist, risk manager, care coordinator, or communication liaison.

In the direct patient care setting, these nurses may work as clinical nurse specialists or nurse practitioners. They base their decisions on nursing theory combined with research and clinical knowledge. Radiology advanced practice nurses in clinical roles demonstrate a high level of autonomy, rendering complex clinical decisions and initiating treatment regimens including treatment for contrast-related events, peripheral vascular disease management, and follow-up care after therapeutic interventions. They conduct comprehensive peri-procedural health assessments and demonstrate expert skill in diagnosis and treatment of complex responses of individuals, families, and communities to actual or potential health problems. They function in collegial relationships with nursing peers and physicians. The radiology
advanced practice nurse acts as a resource for other nurses, physicians, and radiology technologists.

All radiology advanced practice nurses work within the larger healthcare environment. They need to be current and competent in direct patient care and comfortable serving as change agents and leaders in their practice setting.

**Certification**

Certification is a process whereby a certifying organization or governing agency validates a registered nurse’s qualifications, knowledge, and scope of practice in a defined clinical or functional area of nursing. A nurse achieves certification by meeting eligibility requirements determined by the governing agency and by passing a written examination on current practice standards in the specialized practice setting. Through this process, the certifying agency acknowledges to the nurse, the nurse’s colleagues, and the general public that the individual has mastered the body of knowledge that pertains to the nursing specialty.

The Radiologic Nursing Certification Board (RNCB) has established eligibility requirements, created an examination for initial certification, and identified a re-certification process for recognition as a Certified Radiological Nurse (CRN). Upon passing the examination, the nurse may use the initials CRN in addition to licensing and educational designations. The CRN designation attests that the nurse has demonstrated in-depth knowledge of the field of radiology nursing. Specific information about this specialty certification is available from ARNA at http://www.arna.net. An advanced level certification for radiology nursing is not available at this time.

Nurse practitioners and clinical nurse specialists may be required to have professional certification in order to practice. This certification denotes their advanced practice status and is administered by governing bodies other than the RNCB, such as the American Nurses Credentialing Center (ANCC).

**Issues and Opportunities**

One of the most pressing issues facing ARNA is the lack of dedicated radiology nurses in all imaging suites across the country. It is ARNA’s
belief that where patient care is rendered, nursing must be present. Radiology departments have become highly specialized and technologically advanced. Similarly, the complexity and acuity level of patient conditions have risen. Radiology nurses skilled in critical care and possessing specialized knowledge in the field are imperative to ensure safe and effective outcomes for our patients.

ARNA has developed orientation materials that cover the appropriate content needed to prepare nurses for radiology specialty practice. There are no formal academic programs yet. The second edition of Core Curriculum for Radiological Nursing is a critical information resource until such programs can be developed and implemented.

**Summary**

Quality care for all patients is a primary responsibility of nurses. The standards of care and standards of professional practice can help the nurse set goals for professional growth in the specialty of radiology nursing practice.

The art of nursing also has an essence that is not defined or measured by scientific analysis; standards of caring, compassion, commitment, and nursing intuition must be established by each radiology nurse to promote the highest level of patient care.
STANDARDS OF RADIOLOGY NURSING PRACTICE
STANDARDS OF PRACTICE

STANDARD 1. ASSESSMENT
The radiology registered nurse collects comprehensive data pertinent to the patient’s health and situation.

Measurement Criteria:
The radiology registered nurse:

- Collects data in a systematic and ongoing process. For example, health history pertinent to the radiology environment, which can include, but is not limited to:
  - Medical history:
    - Ability to lie flat without discomfort
    - Ability to follow verbal instructions
    - Allergies and type of allergic reaction
    - Renal function if the patient is over age 65 and is to receive IV contrast
    - Adverse reactions to procedural sedation
    - Past experiences with pain medications and pain management
  - Surgical history:
    - Pacemaker, cochlear implant, metal implants, implantable electronic devices of any sort
    - Recent surgeries
  - Psychosocial history:
    - Significant other identified
    - Cultural considerations identified and addressed
    - Any past claustrophobia
    - Substance abuse history
    - Needle phobia (belonephobia)

Continued
Past experiences that influence ability to relax or cooperate
Accidents or injuries
  Metal fragments in the eye or face (MRI)
Communicable disease
  May require special environmental adjustments and scheduling
Safety
  Risk of falls
Prioritizes data collection activities based on the patient’s immediate condition, or the anticipated needs of the patient or situation.
Involves the patient, family, other healthcare providers, and environment, as appropriate, in holistic data collection.
Uses appropriate evidence-based assessment techniques and instruments in collecting pertinent data.
Uses analytical models and problem-solving tools.
Synthesizes available data, information, and knowledge relevant to the situation to identify patterns and variances.
Documents relevant data in a retrievable format.
Uses developmentally and age-appropriate assessment techniques when the patient is a child or an elder.
Uses age- and size-appropriate instruments to collect assessment data when the patient is a child or an elder.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

  Initiates and interprets diagnostic tests and procedures relevant to the patient’s current status.
  Bases assessment techniques on current research.
STANDARD 2. DIAGNOSIS
The radiology registered nurse analyzes the assessment data to determine the diagnoses or issues.

Measurement Criteria:
The radiology registered nurse:

- Derives the diagnoses or issues based on assessment data.
- Validates the diagnoses or issues with the patient, family, and other healthcare providers when possible and appropriate.
- Makes diagnoses that are developmentally and age-appropriate. These include growth and development and family dynamics as applicable when the patient is a child or an elder.
- Documents diagnoses or issues in a manner that facilitates the determination of the expected outcomes and plan.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Systematically compares clinical findings with normal and abnormal variations and developmental events in formulating a differential diagnosis.
- Uses complex data and information obtained during interview, examination, and diagnostic procedures in identifying diagnoses.
- Assists staff in developing and maintaining competency in the diagnostic process.
STANDARD 3. OUTCOMES IDENTIFICATION
The radiology registered nurse identifies expected outcomes for a plan individualized to the patient and situation.

Measurement Criteria:

The radiology registered nurse:

- Involves the patient, family, and other healthcare providers in formulating expected outcomes when possible and appropriate.
- Derives culturally appropriate expected outcomes from the diagnoses.
- Considers associated risks, benefits, costs, current scientific evidence, and clinical expertise when formulating expected and realistic outcomes.
- Defines expected outcomes in terms of the patient, patient values, ethical considerations, environment, or situation with such considerations as associated risks, benefits and costs, and current scientific evidence.
- Includes a time estimate for attainment of expected outcomes.
- Develops expected outcomes that provide direction for continuity of care.
- Ensures that outcomes are developmentally and age-appropriate when the patient is a child or an elder.
- Modifies expected outcomes based on changes in the status of the patient or evaluation of the situation.
- Documents expected outcomes as measurable goals.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:

The advanced practice radiology registered nurse:

- Identifies expected outcomes that incorporate scientific evidence and are achievable through implementation of evidence-based practices.
• Identifies expected outcomes that incorporate cost and clinical effectiveness, patient satisfaction, and continuity and consistency among providers.

• Supports the use of clinical guidelines linked to positive patient outcomes.
STANDARD 4. PLANNING

The radiology registered nurse develops a plan that prescribes strategies and alternatives to attain expected outcomes.

Measurement Criteria:

The radiology registered nurse:

- Develops an individualized plan considering patient characteristics and the situation.
- Develops the plan in conjunction with the patient, family, and others, as appropriate.
- Includes strategies in the plan that address each of the identified diagnoses or issues, which may include strategies for promotion and restoration of health and prevention of illness, injury, and disease.
- Provides for continuity in the plan.
- Incorporates an implementation pathway or timeline in the plan.
- Establishes the plan priorities with the patient, family, and others as appropriate.
- Uses the plan to provide direction to other members of the healthcare team.
- Defines the plan to reflect current statutes, rules and regulations, and standards.
- Integrates current trends and research affecting care in the planning process.
- Considers the economic impact of the plan.
- Uses standardized language or recognized terminology to document the plan.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:

The advanced practice radiology registered nurse:

- Identifies assessment, diagnostic strategies, and therapeutic interventions in the plan that reflect current evidence, including data, research, literature, and expert clinical knowledge.
• Selects or designs strategies to meet the multifaceted needs of complex patients.
• Includes the synthesis of patients’ values and beliefs regarding nursing and medical therapies in the plan.
• Participates in the design and development of multidisciplinary and interdisciplinary processes to address the situation or issue.
• Contributes to the development and continuous improvement of organizational systems that support the planning process.
• Supports the integration of clinical, human, and financial resources to enhance and complete the decision-making process.
STANDARD 5. IMPLEMENTATION
The radiology registered nurse implements the strategies in the identified plan.

Measurement Criteria:
The radiology registered nurse:

- Implements the plan in a safe and timely manner.
- Documents implementation and any modifications, including changes to or omissions from the identified plan.
- Uses evidence-based interventions and treatments specific to the diagnosis or problem.
- Ensures that the interventions are developmentally and age-appropriate and family-centered when the patient is a child or an elder.
- Uses community resources and systems to implement the plan.
- Collaborates with nursing colleagues and others to implement the plan.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Facilitates the use of systems and community resources to implement the plan.
- Supports collaboration with nursing colleagues and other disciplines to implement the plan.
- Incorporates new knowledge and strategies to initiate change in nursing care practices if desired outcomes are not achieved.
STANDARD 5A. COORDINATION OF CARE
The radiology registered nurse coordinates care delivery in a variety of radiological settings.

Measurement Criteria:
The radiology registered nurse:

• Acts as a case manager to ensure that the patient with multiple radiological studies or interventions receives these in the most efficient manner.
• Negotiates specialized care needs with the patient, family, appropriate systems, outside agencies, and providers prior to radiological intervention.
• Coordinates implementation of the plan.
• Documents the coordination of care.

Measurement Criteria for the Advanced Practice Radiology registered nurse:
The advanced practice radiology registered nurse:

• Provides leadership in the coordination of multidisciplinary health care for integrated delivery of patient care services.
• Synthesizes data and information to prescribe necessary system and community support measures, including environmental modifications.
• Coordinates system and community resources that enhance delivery of care across continuums.
STANDARD 5B. HEALTH TEACHING AND HEALTH PROMOTION
The radiology registered nurse employs strategies to promote health and a safe environment.

Measurement Criteria:
The radiology registered nurse:

- Provides health teaching that addresses such topics as healthy lifestyles, risk-reducing behaviors, developmental needs, activities of daily living, and preventive self-care.
- Provides health teaching that ensures a safe environment through modality-specific pre-screening and recognition of inherent risks associated with diagnostic and therapeutic imaging and procedures.
- Uses health promotion and health teaching methods appropriate to the situation and the patient’s developmental level, learning needs, readiness, ability to learn, language preference, and culture whether a child or an elder.
- Seeks opportunities for feedback and evaluation of the effectiveness of the strategies used.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Synthesizes empirical evidence on risk behaviors, learning theories, behavioral change theories, motivational theories, epidemiology, and other related theories and frameworks when designing health information and patient education.
- Designs health information and patient education based on current scientific knowledge and research and appropriate to the patient’s developmental level, learning needs, readiness to learn, and cultural values and beliefs.
- Evaluates health information resources, such as the Internet, in the area of practice for accuracy, readability, and comprehensibility to help patients access quality health information.
STANDARD 5c. CONSULTATION
The advanced practice radiology registered nurse provides consultation to influence the identified plan, enhance the abilities of others, and effect change.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:

The advanced practice radiology registered nurse:

- Synthesizes clinical data, theoretical frameworks, and evidence when providing consultation.
- Facilitates the effectiveness of a consultation by involving the patient in decision-making, negotiating role responsibilities, and ensuring that understanding is reached.
- Communicates consultation recommendations that facilitate change.
**STANDARD 5D. PRESCRIPTIVE AUTHORITY AND TREATMENT**
The advanced practice radiology registered nurse uses prescriptive authority, procedures, referrals, treatments, and therapies in accordance with state and federal laws and regulations.

*Measurement Criteria for the Advanced Practice Radiology Registered Nurse:*
The advanced practice radiology registered nurse:

- Prescribes evidence-based treatments, therapies, and procedures considering the patient’s comprehensive healthcare needs.
- Prescribes pharmacological agents based on a current knowledge of pharmacology and physiology.
- Prescribes specific pharmacological agents and treatments based on clinical indicators, the patient’s status and needs, and the results of diagnostic and laboratory tests.
- Evaluates therapeutic and potential adverse effects of pharmacological and non-pharmacological treatments.
- Provides patients with information about intended effects and potential adverse effects of proposed prescriptive therapies.
- Provides information about costs and alternative treatments and procedures, as appropriate.
**STANDARD 6. EVALUATION**
The radiology registered nurse evaluates progress toward attainment of outcomes.

**Measurement Criteria:**
The radiology registered nurse:

- Conducts a systematic, ongoing, and criterion-based evaluation of the outcomes in relation to the structures and processes prescribed by the plan and the indicated timeline.
- Includes the patient and others involved in the care or situation in the evaluative process.
- Evaluates the effectiveness of the planned strategies in relation to patient responses and the attainment of the expected outcomes.
- Documents the results of the evaluation.
- Uses ongoing assessment data to revise the diagnoses, outcomes, the plan, and the implementation as needed.
- Disseminates the results to the patient and others involved in the care or situation, as appropriate, in accordance with state and federal laws and regulations.

**Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:**
The advanced practice radiology registered nurse:

- Evaluates the accuracy of the diagnosis and effectiveness of the interventions in relationship to the patient’s attainment of expected outcomes.
- Synthesizes the results of the evaluation analyses to determine the impact of the plan on the affected patients, families, groups, communities, and institutions.
- Uses the results of the evaluation analyses to make or recommend process or structural changes including policy, procedure, or protocol documentation, as appropriate.
STANDARDS OF PROFESSIONAL PERFORMANCE

STANDARD 7. QUALITY OF PRACTICE
The radiology registered nurse systematically enhances the quality and effectiveness of nursing practice.

Measurement Criteria:
The radiology registered nurse:

• Demonstrates quality by documenting the application of the nursing process in a responsible, accountable, and ethical manner.

• Uses the results of quality improvement activities to initiate changes in nursing practice and in the healthcare delivery system.

• Uses creativity and innovation in nursing practice to improve care delivery.

• Incorporates new knowledge to initiate changes in nursing practice if desired outcomes are not achieved.

• Participates in quality improvement activities. Such activities may include:
  • Identifying aspects of practice important for quality monitoring.
  • Using indicators developed to monitor quality and effectiveness of nursing practice.
  • Collecting data to monitor quality and effectiveness of nursing practice.
  • Analyzing quality data to identify opportunities for improving nursing practice.
  • Formulating recommendations to improve nursing practice or outcomes.
  • Implementing activities to enhance the quality of nursing practice.
  • Developing, implementing, and evaluating policies, procedures, and guidelines to improve the quality of practice.

Continued
STANDARDS OF PROFESSIONAL PERFORMANCE

- Participating on interdisciplinary teams to evaluate clinical care or health services.
- Participating in efforts to minimize costs and unnecessary duplication.
- Analyzing factors related to safety, satisfaction, effectiveness, and cost–benefit options.
- Analyzing organizational systems for barriers.
- Implementing processes to remove or decrease barriers in organizational systems.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:

The advanced practice radiology registered nurse:

- Obtains and maintains professional certification.
- Designs quality improvement initiatives.
- Implements initiatives to evaluate the need for change.
- Evaluates the practice environment and quality of nursing care delivered in relation to existing evidence, identifying opportunities for the generation and use of research.
STANDARD 8. EDUCATION
The radiology registered nurse attains knowledge and competency that reflects current nursing practice.

Measurement Criteria:

The radiology registered nurse:

- Participates in ongoing educational activities related to appropriate knowledge bases and professional issues.
- Demonstrates a commitment to lifelong learning through self-reflection and inquiry to identify learning needs.
- Seeks experiences that reflect current practice in order to maintain skills and competence in clinical practice or role performance.
- Acquires knowledge and skills appropriate to the specialty area, practice setting, role, or situation.
- Maintains professional records that provide evidence of competency and lifelong learning.
- Seeks experiences and formal and independent learning activities to maintain and develop clinical and professional skills and knowledge.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:

The advanced practice radiology registered nurse:

- Uses current healthcare research findings and other evidence to expand clinical knowledge, enhance role performance, and increase knowledge of professional issues.
STANDARD 9. PROFESSIONAL PRACTICE EVALUATION

The radiology registered nurse evaluates one’s own nursing practice in relation to professional practice standards and guidelines, relevant statutes, rules, and regulations.

Measurement Criteria:

The radiology registered nurse’s practice reflects the application of knowledge of current practice standards, guidelines, statutes, rules, and regulations. The radiology registered nurse:

• Provides age-appropriate care in a culturally and ethnically sensitive manner.
• Engages in self-evaluation of practice on a regular basis, identifying areas of strength as well as areas in which professional development would be beneficial.
• Obtains informal feedback regarding one’s own practice from patients, peers, professional colleagues, and others.
• Participates in systematic peer review as appropriate.
• Takes action to achieve goals identified during the evaluation process.
• Provides rationale for practice beliefs, decisions, and actions as part of the informal and formal evaluation processes.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:

The advanced practice radiology registered nurse:

• Engages in a formal process seeking feedback regarding one’s own practice from patients, peers, professional colleagues, and others.
STANDARD 10. COLLEGIALLY
The radiology registered nurse interacts with and contributes to the professional development of peers and colleagues.

Measurement Criteria:
The radiology registered nurse:

- Shares knowledge and skills with peers and colleagues as evidenced by such activities as patient care conferences or presentations at formal or informal meetings.
- Provides peers with feedback regarding their practice and role performance.
- Interacts with peers and colleagues to enhance one’s own professional nursing practice and role performance.
- Maintains compassionate and caring relationships with peers and colleagues.
- Contributes to an environment that is conducive to the education of healthcare professionals.
- Contributes to a supportive and healthy work environment.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Models expert practice to interdisciplinary team members and healthcare consumers.
- Mentors other radiology registered nurses and colleagues as appropriate.
- Participates with interdisciplinary teams that contribute to role development and advanced nursing practice and health care.
- Participates in professional activities.
- Contributes to an environment that is conducive to clinical education of other healthcare providers and acts as teacher, mentor, and preceptor, as appropriate.
STANDARD 11. COLLABORATION
The radiology registered nurse collaborates with patient, family, and others in the conduct of nursing practice.

Measurement Criteria:
The radiology registered nurse:

• Communicates with patient, family, and healthcare providers regarding patient care and the nurse’s role in the provision of that care.
• Collaborates in creating a documented plan focused on outcomes and decisions related to care and delivery of services that indicates communication with patients, families, and others.
• Partners with others to effect change and generate positive outcomes through knowledge of the patient or situation.
• Documents referrals, including provisions for continuity of care.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

• Partners with other disciplines to enhance patient care through interdisciplinary activities such as education, consultation, management, technological development, or research opportunities.
• Facilitates an interdisciplinary process with other members of the healthcare team.
• Documents plan-of-care communications, rationale for plan-of-care changes, and collaborative discussions to improve patient care.
STANDARD 12. ETHICS
The radiology registered nurse integrates ethical provisions in all areas of practice.

Measurement Criteria:
The radiology registered nurse:

• Uses Code of Ethics for Nurses with Interpretive Statements (ANA, 2001) to guide practice.
• Delivers care in a manner that preserves and protects patient autonomy, dignity, and rights.
• Maintains patient confidentiality within legal and regulatory parameters.
• Serves as a patient advocate assisting patients in developing skills for self-advocacy.
• Maintains a therapeutic and professional patient–nurse relationship with appropriate professional role boundaries.
• Demonstrates a commitment to practicing self-care, managing stress, and connecting with self and others.
• Contributes to resolving ethical issues of patients, colleagues, or systems as evidenced in such activities as participating on ethics committees.
• Reports illegal, incompetent, or impaired practices.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

• Informs the patient of the risks, benefits, and outcomes of health-care regimens.
• Participates in interdisciplinary teams that address ethical risks, benefits, and outcomes.
STANDARD 13. RESEARCH
The radiology registered nurse integrates research findings into practice.

Measurement Criteria:
The radiology registered nurse:

- Uses the best available evidence, including research findings, to guide practice decisions.
- Actively participates in research activities at various levels appropriate to the nurse's level of education and position. Such activities may include:
  - Identifying clinical problems specific to nursing research (patient care and nursing practice).
  - Participating in data collection (surveys, pilot projects, formal studies).
  - Participating in human subject protection activities, including informed consent.
  - Participating in a formal committee or program.
  - Sharing research activities and findings with peers and others.
  - Conducting research.
  - Critically analyzing and interpreting research for application to practice.
  - Using research findings in the development of policies, procedures, and standards of practice in patient care.
  - Incorporating research as a basis for learning.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Contributes to nursing knowledge by conducting or synthesizing research that discovers, examines, and evaluates knowledge, theories, criteria, and creative approaches to improve healthcare practice.
- Formally disseminates research findings through activities such as presentations, publications, consultation, and journal clubs.
STANDARD 14. RESOURCE UTILIZATION
The radiology registered nurse considers factors related to safety, effectiveness, cost, and impact on practice in the planning and delivery of nursing services.

Measurement Criteria:
The radiology registered nurse:

- Evaluates factors such as safety, effectiveness, availability, cost and benefits, efficiencies, and impact on practice, when choosing practice options that would result in the same expected outcome.

- Assists the patient and family in identifying and securing appropriate and available services to address health-related needs.

- Assigns or delegates tasks, based on the needs and condition of the patient, potential for harm, stability of the patient’s condition, complexity of the task, and predictability of the outcome.

- Assists the patient and family in becoming informed consumers about the options, costs, risks, and benefits of treatment and care.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Uses organizational and community resources to formulate multidisciplinary or interdisciplinary plans of care.

- Develops innovative solutions for patient care problems that address effective resource utilization and maintenance of quality.

- Develops evaluation strategies to demonstrate cost effectiveness, cost benefit, and efficiency factors associated with nursing practice.
STANDARD 15. LEADERSHIP
The radiology registered nurse provides leadership in the professional practice setting and the profession.

Measurement Criteria:
The radiology registered nurse:

- Engages in teamwork as a team player and a team builder.
- Works to create and maintain healthy work environments in local, regional, national, or international communities.
- Displays the ability to define a clear vision, the associated goals, and a plan to implement and measure progress.
- Demonstrates a commitment to continuous, lifelong learning for self and others.
- Teaches others to succeed by mentoring and other strategies.
- Exhibits creativity and flexibility through times of change.
- Demonstrates energy, excitement, and a passion for quality work.
- Willingly accepts mistakes by self and others, thereby creating a culture in which risk-taking is not only safe, but also expected.
- Inspires loyalty through valuing of people as the most precious asset in an organization.
- Directs the coordination of care across settings and among caregivers, including oversight of licensed and unlicensed personnel in any assigned or delegated tasks.
- Serves in key roles in the work setting by participating on committees, councils, and administrative teams.
- Promotes advancement of the profession through participation in professional organizations.

Additional Measurement Criteria for the Advanced Practice Radiology Registered Nurse:
The advanced practice radiology registered nurse:

- Works to influence decision-making bodies to improve patient care.
• Provides direction to enhance the effectiveness of the healthcare team.

• Initiates and revises protocols or guidelines to reflect evidence-based practice, to reflect accepted changes in care management, or to address emerging problems.

• Promotes communication of information and advancement of the profession through writing, publishing, and presentations for professional or lay audiences.

• Designs innovations to effect change in practice and improve health outcomes.
REFERENCES


Index

Note: Entries with [2007] indicate an entry from *Radiology Nursing: Scope and Standards of Practice (2007)*, reproduced in Appendix A. That information is not current but included for historical value only.

A

Abilities in radiologic and imaging nursing practice, 19, 32, 38, 43
See also Knowledge, skills, abilities, and judgment

Accessibility in radiologic and imaging nursing practice, 3, 14, 31, 90

Accidents/injuries, 20

Accountability in radiologic and imaging nursing practice
leadership and, 43
quality of practice and, 40
See also Delegation

ACLS. See Advanced cardiac life support (ACLS)

ACR. See American College of Radiology (ACR)

Activities in radiologic and imaging nursing practice, 4, 10, 38, 39, 40, 44, 45, 71, 72, 76, 82, 94, 96, 98, 100, 101
nursing, radiologic and imaging, 5

Advanced cardiac life support (ACLS), 15

Advanced practice registered nurses (APRNs)
in radiologic and imaging nursing practice, 13–14, 78–79
assessment competencies, 21
measurement criteria [2007], 82
certification, 15
collaboration competencies, 45–46
measurement criteria [2007], 99
collegiality competencies
measurement criteria [2007], 98
consultation competencies, 32
measurement criteria [2007], 91
coordination of care competencies, 29
measurement criteria [2007], 89
decision-making, 14
defined, 50
diagnosis competencies, 22
measurement criteria [2007], 83
education competencies, 38
measurement criteria [2007], 96
environmental health competencies, 49
ethics competencies, 37
measurement criteria [2007], 100
evaluation competencies, 34–35
measurement criteria [2007], 93
evidence-based practice and research competencies, 39
functions of, 14
health teaching and promotion competencies, 30–31
INDEX

measurement criteria [2007], 90
healthcare consumers and
cultural beliefs, diversity, and
individuality, 7, 73
implementation competencies, 28
measurement criteria [2007], 88
leadership competencies, 43–44
measurement criteria [2007], 103–104
outcomes identification competencies, 23
measurement criteria [2007], 84–85
planning competencies, 25–26
measurement criteria [2007], 86–87
prescriptive authority and treatment
competencies, 33
measurement criteria [2007], 92
professional practice evaluation
competencies, 47
measurement criteria [2007], 97
quality of practice competencies, 41
measurement criteria [2007], 95
research competencies
measurement criteria [2007], 101
resource utilization competencies, 48
measurement criteria [2007], 102
roles, 6
Adverse reaction, defined, 50
Advocacy in radiologic and imaging nursing
practice, 10, 13, 16
competencies involving, 27, 29, 31, 36,
48, 49
healthcare consumer, 5, 7, 72
Age-appropriate care in radiologic and
imaging nursing practice, 8, 13, 47, 75, 77,
82, 83, 84, 97
See also Cultural competence and
sensitivity
AHA. See American Heart Association
(AHA)
Allergies, contrast, 6, 19, 52, 72
Ambulatory radiology and imaging clinics,
4, 71
American College of Radiology (ACR), 5,
50, 72
American Heart Association (AHA), 15
American Nurses Association (ANA), viii, ix
Code of Ethics for Nurses with Interpretive
Statements, ix, 6, 73
Nursing’s Social Policy Statement: The
Essence of the Profession, ix, 6, 73
radiologic nursing by, 2, 69
American Nurses Credentialing Center
(ANCC), 15, 79
American Radiological Nurses Association
(ARNA), 2–4, 9, 50, 69, 70, 79–80
Core Curriculum for Radiological Nursing,
4, 9–10, 70, 80
mission of, 70
American Society of Radiologic Technologists
(ASRT), 5, 51, 72
ANA. See American Nurses Association (ANA)
ANCC. See American Nurses Credentialing
Center (ANCC)
ANCC Commission on Accreditation, 70
Angiography, 4
defined, 50
Anxiolysis, defined, 50
Anxiolytics, defined, 50
AORN. See Association of peri-Operative
Registered Nurses (AORN)
APRNs. See Advanced practice registered
nurses (APRNs)
ARIN. See Association for Radiologic and
Imaging Nursing (ARIN)
ARNA. See American Radiological Nurses
Association (ARNA)
ASRT. See American Society of Radiologic
Technologists (ASRT)
Assessment in radiologic and imaging
nursing practice
assessment data and its usage, 19, 22, 34
competencies involving, 19–21
defined, 51
Standard of Practice, 19–21
[2007], 81–82
Associated Sciences Consortium, of RSNA, 2
Association for Radiologic and Imaging
Nursing (ARIN), v–vii, viii, ix, 2, 3, 7, 9,
15, 16, 50
Journal of Radiology Nursing, 9
Nursing: Scope and Standards of Practice, ix
Radiologic and Imaging Nursing: Scope
and Standards of Practice, ix
Association of peri-Operative Registered
Nurses (AORN), 7, 74
Association of Vascular and Interventional
Radiographers (AVIR), 2, 51
Assumptions in radiologic and imaging
nursing practice, 10, 12, 28, 75, 77
Autonomy in radiologic and imaging nursing
practice, 14, 36, 43, 78, 100
defined, 51
AVIR. See Association of Vascular and
Interventional Radiographers (AVIR)
INDEX

B
Basic life support (BLS), 15
Becquerel, Antoine-Henri, 1, 68
Behaviors in radiologic and imaging nursing practice
risk-reducing, 30, 90
Benefits and cost. See Cost and economic controls
Biopsy, defined, 51
BLS. See Basic life support (BLS)
Body of knowledge in radiologic and imaging nursing practice, 6, 9, 15, 69, 73, 79
for healthcare consumers, 2
See also Knowledge, skills, abilities, and judgment
Breast imaging, 4, 6, 73
defined, 51
Budgetary issues. See Cost and economic controls

C
Cardiac catheterization, 4, 6, 76
defined, 51
Care and caring in radiologic and imaging nursing practice, 9, 11, 12, 13
assessment and, 21
collaboration and, 45, 46
communication and, 42
continuity of care, 52
coordination of care and, 29
ethics and, 36
evaluation and, 34, 35
evidence-based practice and research and, 39
health teaching and promotion and, 30
healthcare consumers and, 4, 5, 6, 71
implementation and, 27, 28
leadership and, 43
outcomes identification and, 23
planning and, 24
professional practice evaluation and, 47
quality of practice and, 40, 41
resource utilization and, 48
self-care, 16
setting, 14
See also Scope of radiologic and imaging nursing practice
Care delivery. See Coordination of care
Care recipients. See Healthcare consumers
Care standards. See Standards of Practice
Caregivers, defined, 51
Central venous access
defined, 51
for dialysis, 3
Cerebral embolization, 3
defined, 51
Certification and credentialing in radiologic and imaging nursing practice, 14–15, 79
competencies involving, 38, 41
defined, 14
Certified nurse-midwives (CNMs), 13
Certified nurse practitioners (CNPs), 13
Certified Radiological Nurse (CRN), 15, 52, 79
Certified registered nurse anesthetists (CRNAs), 13
Clients. See Healthcare consumers
Clinical nurse specialists (CNSs), 13
CNMs. See Certified nurse-midwives (CNMs)
CNPs. See Certified nurse practitioners (CNPs)
CNSs. See Clinical nurse specialists (CNSs)
Code of Ethics for Nurses with Interpretive Statements (ANA), ix, 6, 73
Code of Ethics (nursing)
Code of Ethics for Nurses with Interpretive Statements, ix, 6, 73
defined, 51
Collaboration in radiologic and imaging nursing practice
competencies involving, 27, 28, 34, 45–46
defined, 52
Standards of Professional Performance, 45–46
[2007], 99
See also Communication; Interprofessional healthcare
Collegiality in radiologic and imaging nursing practice
Standards of Professional Performance [2007], 98
See also Collaboration; Interprofessional healthcare; Peer review and relations
Commitment in radiologic and imaging nursing practice, 1, 16, 38, 43, 51, 68, 70, 80, 96, 100, 103
Communicable disease, 20
Communication in radiologic and imaging nursing practice, 13
competencies involving, 20, 25, 28, 29, 30, 32, 42, 43, 45, 46, 49
Standards of Professional Performance, 42
See also Collaboration

Radiologic and Imaging Nursing: Scope and Standards of Practice
Community healthcare, 4, 21, 27, 28, 29, 36, 48, 71, 73, 88, 89, 102
See also Population-based healthcare
Compassion in radiologic and imaging nursing practice, x, 1, 16, 68, 80, 98
Competencies for radiologic and imaging nursing standards
for APRNs, 21–23, 25–26, 28–35, 37, 38, 39, 41, 43–44, 45–46, 47, 48, 49
assessment, 19–21
collaboration, 45–46
communication, 42
consultation, 32
coordination of care, 29
diagnosis, 22
education, 38
environmental health, 49
ethics, 36–37
evaluation, 34–35
evidence-based practice and research, 39
function, xi
health teaching and promotion, 30–31
implementation, 27–28
leadership, 43–44
outcomes identification, 23
planning, 24–26
prescriptive authority and treatment, 33
professional practice evaluation, 47
quality of practice, 40–41
for radiologic and imaging registered nurse, 36, 38, 39, 40–41, 42, 43, 45, 47, 48, 49
resource utilization, 48
See also Advanced practice registered nurses (APRNs); Standards of Practice; Standards of Professional Performance; Specific standards
Competency, defined, 52
Computed tomography (CT), 4
defined, 52
scanning, 6, 72
Confidentiality and privacy in radiologic and imaging nursing practice, 13, 78
competencies involving, 21, 36
healthcare consumer's right to, 6, 73
See also Ethics
Consensus Model for APRN Regulation:
Licensure, Accreditation, Certification, and Education, 14
Consultation in radiologic and imaging nursing practice
competencies involving, 32, 38, 39, 45
Standard of Practice, 32 [2007], 91
Continuing education and professional growth in radiologic and imaging nursing practice, 12, 77
Continuity of care, 12, 76
defined, 52
outcomes identification and, 23, 84
Contrast-induced allergies, 6, 19, 72
defined, 52
Contrast media, 8, 11, 75, 76
defined, 52
Coordination of care in radiologic and imaging nursing practice
competencies involving, 29
healthcare team members and, 5, 71
Standard of Practice, 29 [2007], 89
Core Curriculum for Radiological Nursing (ARNA), 4, 9–10, 70, 80
Cost and economic controls in radiologic and imaging nursing practice
competencies involving, 23, 33, 40, 48
Credentialing, See Certification and credentialing
Criteria for radiologic and imaging nursing practice. See Measurement criteria
Critical care in radiologic and imaging nursing practice, 9, 16, 80
CRN. See Certified Radiological Nurse (CRN)
CRNAs. See Certified registered nurse anesthetists (CRNAs)
CT. See Computed tomography (CT)
Cultural appropriateness, 8, 75
Cultural competence and sensitivity in radiologic and imaging nursing practice, 7, 73
assessment and, 19, 20, 21
competencies involving, 19, 20, 21, 23, 24, 27, 30, 31
health teaching and promotion and, 30, 31
implementation and, 27
outcomes identification and, 23
planning and, 24
professional practice evaluation and, 47
See also Developmentally appropriate care
Curie, Marie, 1, 68
Curie, Pierre, 1, 68

D
Data and information in radiologic and imaging nursing practice
assessment data usage, 19, 20, 21, 22, 34
Data and information (continued)
data analysis, 13
data collection, 12, 13, 20, 21, 39, 77
See also Assessment; Diagnosis

Decision-making in radiologic and imaging nursing practice, ix, 7, 14, 73
competencies involving, 22, 32, 36, 37, 44
consultation and, 32
diagnosis and, 22
ethics and, 36, 37
leadership and, 44

Dedication in radiologic and imaging nursing practice, 15, 79

Delegation in radiologic and imaging nursing practice, 12, 76
competencies involving, 48
declared, 52

Developmentally appropriate care, 8, 47, 75

Diagnosis in radiologic and imaging nursing practice
competencies involving, 22
declared, 52
Standard of Practice, 22
[2007], 83

Diagnostic imaging, 4, 6
declared, 53

Diagnostic Related Groupings (DRGs), 3, 69
Diagnostic testing, defined, 53

Dignity in radiologic and imaging nursing practice
6, 13, 29, 36, 43, 73, 78
See also Ethics

Disposal of radioactive and chemotherapeutic materials, 11

Diversity in radiologic and imaging nursing practice
healthcare consumer and, 7, 73
radiologic and imaging settings, 6

Documentation in radiologic and imaging nursing practice
assessment and, 21
collaboration and, 45, 46
competencies involving, 21, 22, 23, 25, 28, 29, 34, 40, 45, 46
coordination of care and, 29
diagnosis and, 22
evaluation and, 34
implementation and, 28
outcomes identification and, 23
planning and, 25
quality of practice and, 40

Dose monitoring in radiologic and imaging nursing practice, 11

DRGs. See Diagnostic Related Groupings (DRGs)

E
Economic controls. See Cost and economic controls

Education in radiologic and imaging nursing practice, 7, 74
competencies involving, 38
continuing education and professional growth, 12, 77
of healthcare consumers, 5, 12, 71
of RNs, 9–10
Standards of Professional Performance, 38
[2007], 96

Electrophysiology, 4
declared, 53

Environment, defined, 53

Environmental health in radiologic and imaging nursing practice
competencies involving, 49
declared, 53
environmentally sensitive issues, 8, 75
Standards of Professional Performance, 49

Errors in healthcare, 42

Ethics in radiologic and imaging nursing practice
competencies involving, 36–37
quality of practice and, 40
Standards of Professional Performance, 36–37
[2007], 100

Evaluation in radiologic and imaging nursing practice, 13
competencies involving, 34–35
declared, 53
Standard of Practice, 34–35
[2007], 93
See also Expected outcomes; Professional practice evaluation

Evidence-based practice, defined, 53

Evidence-based practice and research in radiologic and imaging nursing practice
competencies involving, 39
Standards of Professional Performance, 39

Expected outcomes in radiologic and imaging nursing practice
attainment of, 34
collaboration and, 45, 46
declared, 53
diagnosis and, 22
ethics and, 37
evaluation and, 34
identification and, 23
implementation and, 27, 28
leadership and, 44
planning and, 24, 25
quality of practice and, 40, 41
resource utilization and, 48
See also Evaluation; Outcomes
identification; Planning

F
Families and radiologic and imaging nursing practice
assessment and, 20, 21
collaboration and, 45, 46
communication and, 42
coordination of care and, 29
defined, 53
diagnosis and, 22
environmental health and, 49
ethics and, 36
evaluation and, 34
health teaching and promotion and, 30, 31
leadership and, 44
outcomes identification and, 23
planning and, 24
resource utilization and, 48
See also Families; Family-centered care
Healthcare consumers, 10
advocacy, 5
age, 4
body of knowledge and, 2
comfort and safety, 11
cultural beliefs, diversity, and individuality
of, 7, 73
defined, 54
education of, 5, 12
guidelines, 5
high-risk, 6
individuality, 7, 73
nurses and, 4, 5, 6, 71
practice settings and, 5
protocols, 5
right to privacy and confidentiality, 6
safety, 5
See also Families; Family-centered care
Healthcare providers, 12, 76, 82
defined, 54
technological progress and, 2
Hybrid procedural suite, 5
defined, 54

I
Illness, defined, 54
Imaging, defined, 54
Implementation in radiologic and imaging nursing practice, 13
competencies involving, 27–28
defined, 54
Standard of Practice, 27–28
[2007], 88
Individuality in radiologic and imaging nursing practice
of healthcare consumer, 7, 73
Inferior vena cava (IVC) filter, 3, 70
defined, 54
Information, defined, 54
Intensive care unit (ICU), 5, 71
Interdisciplinary team, 8–9, 75
See also Interprofessional healthcare
Internal ureteral stenting, 3
Interprofessional healthcare in radiologic and imaging nursing practice, 12
competencies involving, 26, 29, 37, 40, 42, 44, 45, 48
defined, 54
See also Coordination of care
Intervention in radiologic and imaging nursing practice
defined, 54
radiologic, on healthcare consumers, 7
stroke, 3, 58
Interventional radiology, 4
defined, 54
Intuition in radiologic and imaging nursing practice, 16, 80
Issues in radiologic and imaging nursing practice, 15–16, 79–80
IVC. See Inferior vena cava (IVC)

J
JCAHO. See Joint Commission on
Accreditation of Healthcare Organizations (JCAHO)
Joint Commission on Accreditation of
Healthcare Organizations (JCAHO), 3, 69
Journal of Radiology Nursing (ARIN), 9
Judgments in radiologic and imaging nursing practice
education and, 38
leadership and, 43
See also Knowledge, skills, abilities, and judgment

K
Knowledge, skills, abilities, and judgment in
radiologic and imaging nursing practice, 10, 16
assessment and, 20, 21
collaboration and, 45
competencies involving, 20, 21, 25, 27, 28, 31, 33, 38, 39, 43, 45, 49
education and, 38
environmental health and, 49
evidence-based practice and research and, 39
health teaching and promotion
and, 31
implementation and, 27, 28
leadership and, 43
planning and, 25
prescriptive authority and treatment and, 33
radiologic and imaging registered nurses
and, 7, 74
See also Education; Evidence-based practice and research

L
Laws, statutes, and regulations in radiologic and imaging nursing practice, 7, 14, 74
evaluation and, 34
planning and, 25
prescriptive authority and treatment and, 33
professional practice evaluation and, 47
See also Ethics
Leadership in radiologic and imaging nursing practice
competencies involving, 43–44
coordination of care and, 29
quality of practice and, 41
Standards of Professional Performance, 43–44
[2007], 103–104
Learning in radiologic and imaging nursing practice, 39, 43
See also Education; Health teaching and promotion
Legal issues. See Laws, statutes, and regulations
Licensing and licensure in radiologic and imaging nursing practice, 9–10, 14, 15, 75, 76, 79
Lithotripsy, 6, 73
defined, 55

M
Magnetic resonance imaging (MRI), 4, 6, 72–73
defined, 55
Mammography, defined, 55
Measurement criteria for radiologic and imaging nursing practice [2007]
assessment, 81–82
collaboration, 99
collegiality, 98
consultation, 91
coordination of care, 89
diagnosis, 83
education, 96
ethics, 100
evaluation, 93
health teaching and promotion, 90
implementation, 88
leadership, 103–104
outcomes identification, 84–85
planning, 86–87
prescriptive authority and treatment, 92
INDEX

professional practice evaluation, 97
quality of practice, 94–95
research, 101
resource utilization, 102
Medical errors, 42
Medical history, 19–20
Medicare, 3, 69
Minimally invasive procedures, defined, 55
Modalities, defined, 55
MRI. See Magnetic resonance imaging (MRI)
Multidisciplinary healthcare, 14, 76, 87, 89, 102
See also Interprofessional healthcare

N
National Federation of Specialty Nursing Organizations (NFSNO), 2, 69
National Patient Safety Goals (NPSG), TJC, 3
Nephrotoxicity, 6, 72
defined, 55
NFSNO. See National Federation of Specialty Nursing Organizations (NFSNO)
NM. See Nuclear medicine (NM)
NOLF. See Nursing Organization Liaison Forum (NOLF)
NPSG. See National Patient Safety Goals (NPSG)
Nuclear imaging. 4
Nuclear medicine (NM), 6, 72
defined, 55
Nursesbooks.org, viii
Nursing, defined, 55
Nursing: Scope and Standards of Practice (ARIN), ix
Nursing activities
radiologic and imaging, 5
See also Activities
Nursing care standards. See Standards of Practice
Nursing competence. See Competencies
Nursing intervention, 3, 7, 54, 70
Nursing judgment. See Knowledge, skills, abilities, and judgment
Nursing Organization Liaison Forum (NOLF), 2, 69
Nursing Organizations Alliance, 2
Nursing practice, defined, 55
Nursing process, xi, 8, 13, 75, 77
defined, 55–56
Nursing shortage, NOLF/NFSNO and, 2, 69
Nursing specialty, 2, 15, 79
Nursing standards
development and function of, x
See also Standards of Practice; Standards of Professional Performance
Nursing’s Social Policy Statement: The Essence of the Profession (ANA), ix, 6, 73

O
Oncologic treatments, 3, 70
defined, 56
Opportunities in radiologic and imaging nursing practice, 15–16, 79–80
Organizations
organizational changes, 3, 70
radiological and imaging, 5
Outcomes identification in radiologic and imaging nursing practice
competencies involving, 23
Standards of Practice, 23
[2007], 84–85
See also Planning

P
PACUs. See Perianesthesia care units (PACUs)
PALS. See Pediatric advanced life support (PALS)
Patient. See Healthcare consumers
Pediatric advanced life support (PALS), 15
Peer review and relations in radiologic and imaging nursing practice, 9, 12
competencies involving, 38, 39, 45, 47
defined, 56
See also Collaboration; Communication; Interprofessional healthcare
Percutaneous drainage tubes, 3, 70
defined, 56
Perianesthesia care units (PACUs), 3, 5, 69, 71
PET. See Positron emission tomography (PET)
Pharmacologic stress testing, 11, 76
defined, 56
Pharmacology, radiologic and imaging nurse and, 11
Plan (defined), 56
Planning in radiologic and imaging nursing practice
collaboration and, 45, 46
competencies involving, 24–26
consultation and, 32
evaluation and, 34, 35
implementation of plan, 27, 28

Radiologic and Imaging Nursing: Scope and Standards of Practice 113
Planning in radiologic (continued)
  leadership and, 43
  outcomes identification and, 23
  resource utilization and, 48
  Standard of Practice, 24–26
  [2007], 86–87

Policies in radiologic and imaging nursing practice, 12
  competencies involving, 21, 35, 39, 40, 43, 48, 49
Population-based healthcare in radiologic and imaging nursing practice, 4, 10, 15, 17, 71
  See also Healthcare consumers
Positron emission tomography (PET), 6, 72
  defined, 56
Prescriptive authority and treatment in radiologic and imaging nursing practice
  competencies involving, 33
  Standard of Practice, 33
  [2007], 92
Preventive practice in healthcare and radiologic and imaging nursing practice
  competencies involving, 24, 25, 30, 31
Privacy in radiologic and imaging nursing practice. See Confidentiality and privacy
Problem-solving approach in radiologic and imaging nursing practice, 12
Procedural sedation, defined, 56
Procedures and policies in radiologic and imaging nursing practice
  defined, 56
  hybrid suites, 5
  innovative, 3, 70
  invasive, 3, 69–70
  special procedures, 6, 72
  See also Policies
Professional practice evaluation in radiologic and imaging nursing practice
  competencies involving, 47
  Standards of Professional Performance, 47
  [2007], 97
Promotive radiologic and imaging nursing practice
  competencies involving, 24, 25, 27, 28, 30, 31, 39, 42, 44, 45, 48, 49
  health teaching and promotion and, 30–31
Psychosocial/spiritual history, 20

Quality, defined, 56
Quality of care in radiologic and imaging nursing practice, 16, 80

Quality of practice in radiologic and imaging nursing practice
  competencies involving, 40–41
  Standards of Professional Performance,
    40–41
    [2007], 94–95

R
Radiation
  defined, 57
  dose monitoring, 11
  exposure, defined, 57
  oncology, 4, 6, 73
  defined, 57
  protection, defined, 57
Radioactive isotopes, defined, 57
Radioactivity, defined, 57
Radiologic and imaging nurse generalist,
  10–13, 76–78
Radiologic and Imaging Nursing: Scope and Standards of Practice (ARIN), ix
Radiologic and imaging nursing practice
  description, 5–9, 72–75
  foundation of, 1, 68
  history of, 1–4, 68–70
  levels, 75–79
  populations served, 4, 71
  practice settings, 4–5, 70, 71–72
  See also Standards of Practice; Standards of Professional Performance
Radiologic and imaging registered nurses, x
  assessment competencies, 21
    measurement criteria [2007], 82
  collaboration competencies, 45
    measurement criteria [2007], 99
  collegiality competencies
    measurement criteria [2007], 98
  communication competencies, 42
  consultation competencies, 32
  coordination of care competencies, 29
    measurement criteria [2007], 89
  diagnosis competencies, 22
    measurement criteria [2007], 83
  education competencies, 38
    measurement criteria [2007], 96
  environmental health competencies, 49
  ethics competencies, 36
    measurement criteria [2007], 100
  evaluation competencies, 34–35
    measurement criteria [2007], 93
  evidence-based practice and research competencies, 39
health teaching and promotion competencies, 30–31
measurement criteria [2007], 90
implementation competencies, 28
measurement criteria [2007], 88
knowledge and clinical skills, 7, 74
leadership competencies, 43
measurement criteria [2007], 103
licensure and education of, 9–10
outcomes identification competencies, 23
measurement criteria [2007], 84–85
planning competencies, 25–26
measurement criteria [2007], 86–87
prescriptive authority and treatment competencies, 33
professional practice evaluation competencies, 47
measurement criteria [2007], 97
quality of practice competencies, 40–41
measurement criteria [2007], 94–95
research competencies
measurement criteria [2007], 101
resource utilization competencies, 48
measurement criteria [2007], 102
role of, 7, 8–9, 74–75
See also Advanced practice registered nurses (APRNs); Radiologic and imaging nurse generalist

Radiologic Nursing Certification Board (RNCB), 15, 57, 79
Radiologic/radiological practice, defined, 57
Radiologic technologists, 8, 75
Radiological Society of North America (RSNA), 2, 58, 69
Radiologist, 8, 75
defined, 57
Radiology defined, 57
history of, 1–4, 68–70

Radiology Nursing: Scope and Standards of Practice, 2

Radium, defined, 57
Reassessment in radiologic and imaging nursing practice, 13, 77
Recipient of care. See Healthcare consumers
Registered nurses (RNs), defined, 57
Regulations in radiologic and imaging nursing practice. See Laws, statutes, and regulations
Research in radiologic and imaging nursing practice, 12, 14, 77
collaboration and, 45
education and, 38

health teaching and promotion and, 31
planning, 24, 25
quality of practice and, 41
Standards of Professional Performance [2007], 101
See also Evidence-based practice and research

Resource utilization in radiologic and imaging nursing practice
competencies involving, 48
coordination of care and, 29
health teaching and promotion and, 31
implementation and, 27, 28
Standards of Professional Performance, 48 [2007], 102

Responsibility in radiologic and imaging nursing practice
competencies involving, 28, 32, 34, 40, 48
Revision of plan in radiologic and imaging nursing practice, 13, 77
Risk management in radiologic and imaging nursing practice
competencies involving, 19, 20, 22, 23, 25, 30, 31, 37, 42, 48, 49
high-risk healthcare consumers, 6
risk-reducing behaviors, 30, 90

RN Magazine, 2, 69
RNCB. See Radiologic Nursing Certification Board (RNCB)
RNs. See Registered nurses (RNs)
Roentgen, Wilhelm Conrad, 1, 68
RSNA. See Radiological Society of North America (RSNA)

S

Safety in radiologic and imaging nursing practice, 9, 11, 12, 14, 20
of healthcare consumer, 5, 6
Scientific Assembly and Annual Meeting, 67th, 2, 69
Scientific knowledge in radiologic and imaging nursing practice, 31, 90
Scope of radiologic and imaging nursing practice, x
defined, 58
description, 5–9, 72–75
foundation, 1, 68
history, 1–4, 68–70
populations served, 4, 71
practice settings, 4–5, 70, 71–72 [2007], 68–80
Sedation
defined, 58
procedural, 56
Self-care in radiologic and imaging nursing practice, 16, 30, 90, 100
Settings in radiologic and imaging nursing practice, 4–5, 70, 71–72
SIR. See Society of Interventional Radiology (SIR)
Skills in radiologic and imaging nursing practice, 7, 74
See also Knowledge, skills, abilities, and judgment
Society of Interventional Radiology (SIR), 2, 5, 58
Special procedures, 6, 72
Standards, defined, 58
Standards of Practice, 19–35
assessment, 19–21
consultation, 32
coordination of care, 29
defined, 58
diagnosis, 22
evaluation, 34–35
health teaching and health promotion, 30–31
implementation, 27–28
outcomes identification, 23
planning in, 24–26
prescriptive authority and treatment, 33 [2007], 81–93
See also Standards of Professional Performance; Specific standards
Standards of Professional Nursing Practice, defined, 58
Standards of Professional Performance for Radiologic and Imaging Nursing collaboration, 45–46
communication, 42
defined, 58
education, 38
environmental health, 49
ethics, 36–37
evidence-based practice and research, 39
leadership, 43–44
professional practice evaluation, 47
quality of practice, 40–41
resource utilization, 48 [2007], 94–104
See also Standards of Practice; Specific standards
Statutory issues in radiologic and imaging nursing practice. See Laws, statutes, and regulations
Stroke interventions, 3
defined, 58
Surgical history, 20

T
Teaching in radiologic and imaging nursing practice. See Health teaching and promotion
Technologist, defined, 58
Technology in radiologic and imaging nursing practice, 3, 70
The Joint Commission (TJC), 3
Therapeutic imaging, defined, 58
Thrombolytic agents, defined, 59
TJC. See The Joint Commission (TJC)
Treatment in radiologic and imaging nursing practice. See Prescriptive authority and treatment

U
Ultrasound, 4, 6, 72
defined, 59

V
Values, attitudes, and beliefs in radiologic and imaging nursing practice, 20, 23, 24, 25, 31, 36
See also Cultural competence and sensitivity
Vascular occlusions, defined, 59
Vascular system, defined, 59

W
Work and practice environments for radiologic and imaging nursing practice
collaboration and, 45
collegiality and, 98
competencies involving, 30, 38, 40, 45, 49
education and, 38
leadership and, 103
See also Environmental health
Workplace issues. See Work and practice environments

X
X-rays, 4
defined, 59
discovery of, 1, 68