

## **Radiology Nursing Certification Examination Test Specifications (Blueprint)**

### **Weights for Areas of Radiology Nursing Practice**

- I. Assess patient and plan care - 25%
- II. Administer, monitor, and evaluate therapeutic interventions - 25%
- III. Provide a safe environment/Manage emergency situations - 25%
- IV. Teach patient and family/Provide a supportive environment - 17%
- V. Participate in QA/CQI, interdisciplinary activities, and professional practice activities - 8%

### **Weights for Radiology Practice Modalities**

- A. Diagnostic Imaging, Fluoroscopy, & Breast Health - 15%

Includes Modified barium swallow study, ERCP, voiding cystourethrogram, hysterosalpingogram, trauma, LP, myelogram. Mammography, breast MRI, breast US, stereotactic biopsy.

- B. CT and MRI - 20%

Includes CT scans, coronary CTA, CT/fluoroscopy, MRI, magnetic resonance angiography, biopsies.

- C. Interventional Radiology - 35%

Includes cardiac catheterization, plasties, stents, thrombolysis, thrombectomy, coils, filters, embolotherapy, UFE, catheter placements, port placements, angiography, port studies, percutaneous cholangiogram, TIPS, nephrostomy.

- D. Ultrasound/Vascular ultrasound - 15%

Includes general, vascular, cardiac ultrasound. Paracentesis, thoracentesis, biopsies, cyst puncture, line placement, thrombin injections for pseudoaneurysms, laser vein ablation, pseudoaneurysm compression, ECHO.

- E. Nuclear Medicine and Radiation Therapy - 15%

Includes isotope studies - thyroid, bone, nuclear medicine. Nuclear cardiology, VQ scan, ACE-inhibitor renogram. Hepatobiliary (HIDA) scans. Isotope therapies. PET.

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Test Specifications (Blueprint)**

Practice Area → Modality ↓	<b>I Assess &amp; plan care 25%</b>	<b>II Administer, monitor, &amp; evaluate care 25%</b>	<b>III Safety &amp; emergency mgmnt 25%</b>	<b>IV Teach &amp; provide supportive env. 17%</b>	<b>V QA/CQI, Interdisc, &amp; Prof prac 8%</b>	<b>Total</b>
<b>A Diagnostic Imaging 15%</b>	5-6	5-6	5-6	3-4	1-2	<b>21-23</b>
<b>B CT &amp; MRI 20%</b>	7-8	7-8	7-8	5-6	2-3	<b>29-31</b>
<b>C Interventional Radiology 35%</b>	13-14	13-14	13-14	8-9	4-5	<b>51-53</b>
<b>D Ultrasound 15%</b>	5-6	5-6	5-6	3-4	1-2	<b>21-23</b>
<b>E Nuclear Med &amp; Rad Rx 15%</b>	5-6	5-6	5-6	3-4	1-2	<b>21-23</b>
<b>Total</b>	<b>36-38</b>	<b>36-38</b>	<b>36-38</b>	<b>24-26</b>	<b>11-13</b>	<b>150</b>

## Activity Statements by Areas of Radiology Nursing Practice

<b>I. Assess patient and plan care. - 25% of test</b>	
1	Assess patient's ability to tolerate the impending examination/procedure.
2	Identify and plan for potential risks associated with administration of sedation, e.g., NPO, airway impairment, age, high Mallampati score, anesthesia consult, high American Society of Anesthesiologists (ASA) physical status score.
3	Assure that required information for the exam procedure is current and complete, e.g., consent, history and physical examination, laboratory findings, etc.
4	Identify and plan for potential risks associated with administration of contrast agents, e.g., nephrotoxicity, neurotoxicity, allergic reactions, extravasation.
5	Identify and plan for patient with actual or potential discomfort or pain, e.g., pain scales.
6	Conduct and document a targeted assessment relative to the examination/procedure, e.g., vascular, neurovascular.
7	Screen patient for procedure-specific risk factors, e.g., decreased glomerular filtration rate, risks for MRI.
8	Include assessment of sleep apnea prior to administration of sedation.
9	Monitor for signs and symptoms of infections and other complications.
10	Review patient's current medications to assist the healthcare provider in medication reconciliation.
11	Identify patient at risk for increased anxiety, e.g., claustrophobia, procedural anxiety, needle phobia, separation anxiety.
12	Identify, document, and report deviations from expected findings.
13	Assess the appropriateness of the examination/procedure, given the clinical indications/findings.
14	Use invasive and non-invasive patient data to formulate an individualized plan of care.
15	Assess potential interactions of patient's alternative medicines and therapies pertaining to exam/procedure, e.g., herbal supplements affecting coagulation.
16	Triage/trouble-shoot catheter/line problems.
17	Contact patient post-procedure to evaluate outcomes, e.g., clinical outcomes, potential complications, customer satisfaction, knowledge deficits.
18	Assess and make referrals for suspected abuse and/or neglect, e.g., child, elder, domestic violence.
<b>II. Administer, monitor, and evaluate therapeutic interventions - 25% of test</b>	
1	Maintain a patent airway and take measures to ensure adequate oxygenation and gas exchange.
2	Identify subtle changes in patient assessment to prevent deterioration of patient status.
3	Monitor patient for therapeutic responses, reactions, untoward effects, toxicity, and incompatibilities of administered medications.
4	Administer medications used in diagnostic imaging, using appropriate routes, accurately and safely.
5	Anticipate the patient's response to procedure/treatment and monitor for potential problems.
6	Reassess patient based on established standards at appropriate intervals.
7	Respond/implement measures to reduce/alleviate discomfort or pain.
8	Implement measures to decrease anxiety, e.g., diversion/distraction, medication, education, family presence, emotional support, soothing environment.

## Activity Statements by Areas of Radiology Nursing Practice

	<b><i>II. Administer, monitor, and evaluate therapeutic interventions, continued</i></b>
9	Evaluate nursing care based on expected patient outcome criteria.
10	Monitor end-tidal carbon dioxide (CO <sub>2</sub> ) levels (capnography).
11	Provide care to patient post-procedure to discharge.
12	Assume primary care of critical care patients in the procedure area.
13	Respond appropriately to adverse events related to administration of contrast agents, e.g., nephrotoxicity, neurotoxicity, allergic reactions, extravasation, vasovagal reactions.
14	Assist in insertion, maintain integrity, and prevention infection of invasive drainage systems.
15	Perform point-of-care testing.
16	Access/de-access implanted venous ports/power ports.
17	Administer blood and blood products.
	<b>III. Provide a safe environment and manage emergencies. - 25% of test</b>
1	Assure universal protocol (time-out/pre-procedural pause) is followed to promote safe patient care.
2	Set priorities based on assignment and unit/institutional needs to maintain safe patient care.
3	Assure availability of emergency equipment, e.g., crash carts, emergency supplies, airway equipment.
4	Question/clarify healthcare provider orders as appropriate.
5	Reinforce radiation safety practices for all persons exposed to radiation, e.g., badges, shields, ALARA.
6	Implement measures to reduce radiation exposure to patient, family, and staff, e.g., monitoring cumulative dose, increasing distance, decreasing time, providing shielding.
7	Delegate patient-care assignments based on competency levels and scope of practice of healthcare team members.
8	Respond appropriately to adverse events related to administration of sedation, e.g., hemodynamic changes, airway obstruction, changes in oxygenation.
9	Identify and coordinate complex situations by rapidly assessing priorities and delegating responsibilities to meet the needs of patient and family.
10	Identify/consider potential risks associated with radiation exposure, e.g., serum pregnancy tests, lengthy procedure.
11	Identify and implement isolation guidelines of the Centers for Disease Control and Prevention (CDC), e.g., contact, airborne, droplet.
12	Recognize unsafe work practices (nurse/patient ratio, ergonomics, standard precautions, etc.) and intervene appropriately.
13	Assess, use, and monitor adaptive/assistive devices for patient safety, immobility, positioning, and comfort.
14	Identify the need of the patient/family for support systems/resources and make appropriate referrals.

## Activity Statements by Areas of Radiology Nursing Practice

	<b>IV. Teach patient and family and provide a supportive environment. - 17% of test</b>
1	Assess patient's understanding of the impending examination/procedure.
2	Acknowledge, respect, and support the emotional state of the patient and/or family as they experience and/or express their emotions.
3	Assess the patient/family's readiness to learn, ability to learn, and barriers to learning.
4	Utilize opportunities for spontaneous education of the patient/family.
5	Recognize and incorporate diversity in the provision of patient care, e.g., ethnicity, gender, disability, spirituality, lifestyle, socioeconomic, and education levels.
6	Verify patient's advance directives and other care-limiting documentation related to the pending procedure.
7	Teach patient and family post-procedure care, e.g., dressings, tubes.
8	Encourage the patient's and family's participation in establishing education goals.
9	Identify, select, and develop education materials based on needs of patient and family.
10	Utilize opportunities for spontaneous education of staff.
	<b>V. Participate in QA/CQI, Interdisciplinary activities, and professional practice activities. - 8% of test</b>
1	Demonstrate leadership, communication skills, and safe, compassionate care.
2	Adhere to the Standards of Practice for Radiologic and Imaging Nursing.
3	Assure completeness of patient record.
4	Communicate clearly and concisely to the healthcare team to meet patient care needs.
5	Advocate for patient's rights, needs, and goals.
6	Provide open line of communication between the radiology department, patient care units, and patient care services, e.g., hand-offs, SBAR
7	Assure proper specimen handling and labeling.
8	Assure practice in accordance with rules and regulations of governing boards of all disciplines involved in imaging.
9	Facilitate reporting of critical results.
10	Incorporate strategies that support effective team dynamics in a caring and nurturing environment.
11	Incorporate evidence-based practice into the patient's plan of care.
12	Maintain skills in computer science/technology, e.g., electronic medical records, monitoring equipment.
13	Involve the patient, family, other healthcare providers, and environment, as appropriate, in a holistic approach.
14	Practice cost-effective measures.
15	Participate in strategies to improve patient/family/staff satisfaction and patient care.
16	Act as a case manager to ensure that the patient with multiple radiological studies or interventions receives these in the most efficient manner.
17	Coordinate and/or participate in interdisciplinary activities to ensure comprehensive and consistent patient outcomes.
18	Question/evaluate own practice based on established standards of care, review of the literature, research, and education.
19	Identify ethical issues in clinical practice and facilitate a resolution with patient, family, and staff.

## Activity Statements by Areas of Radiology Nursing Practice

	<i>V. Participate in QA/CQI, Interdisciplinary activities, and professional practice activities, continued.</i>
20	Assist staff with implementation of evidence-based practice.
21	Evaluate standards of patient care and actively recommend areas for improvement.
23	Participate in quality improvement activities, e.g., tracer methodology, concurrent audits, chart review.
24	Participate in the development of policies, procedures, and standards of care.
25	Participate in program development and implementation, e.g., stroke program.
26	Provide hospital-wide and/or community education in area of expertise.
27	Participate in departmental or hospital-wide nursing committee or task force.
28	Participate in interdisciplinary committee or task force.
29	Evaluate new patient-care products for clinical relevance, usefulness, and cost-effectiveness.