Stillwater Medical

Radiology Aide

Study Guide

Assessments:
8544 Radiology Aide

Aligned to industry recognized standards for limited scope radiology aides.

Endorsed by Stillwater Medical Center

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Overview

This study guide is designed to help students prepare for the Radiology Aide assessments. It includes information about the assessments, the skills standards upon which the assessments are based, resources that can be used to prepare for the assessments, and test taking strategies.

Each of the three sections in this guide provides useful information for students preparing for the Radiology Aide assessment.

- CareerTech and Competency-Based Education: A Winning Combination
- Radiology Aide assessment
  - Assessment Information
  - Standards and Test Content
  - Symbols and Acronyms
- Strategies for Test Taking Success
- Notes

These standards were independently developed and based on the publicly available information regarding the Limited Scope of Practice in Radiography Examination content outline published by the American Registry of Radiologic Technologists (AART). The AART does not endorse, sponsor, or affiliate with this product. The study guide and associated assessment are intended to be used as a preparation tool for candidates in the field of limited scope radiology.

This study guide is endorsed by Stillwater Medical Center. Stillwater Medical Center is a not-for-profit community health system powered by nearly 2,000 employees who are your friends, family, and neighbors. Each of us are committed to serving patients across north central Oklahoma and the Stillwater, OK area with emergency hospital and family medicine services.

CareerTech and Competency-Based Education: A Winning Combination

Competency-based education uses learning outcomes that emphasize both the application and creation of knowledge and the mastery of skills critical for success. In a competency-based education system, students advance upon mastery of competencies, which are measurable, transferable outcomes that empower students.

Career and technology education uses industry professionals and certification standards to identify the knowledge and skills needed to master an occupation. This input provides the foundation for development of curriculum, assessments, and other instructional materials needed to prepare students for wealth-generating occupations and produce comprehensively trained, highly skilled employees demanded by the workforce.

Tools for Success

CareerTech education relies on three basic instructional components to deliver competency-based instruction: skills standards, curriculum materials, and competency assessments.

Skills standards provide the foundation for competency-based instruction and outline the knowledge and skills that must be mastered in order to perform related jobs within an industry. Skills standards are aligned with national skills standards and/or industry certification requirements; therefore, a student trained to the skills standards is equally employable in local, state, and national job markets.

Curriculum materials and textbooks contain information and activities that teach students the knowledge and skills outlined in the skills standards. In addition to complementing classroom instruction, curriculum resources include supplemental activities that enhance learning by providing opportunities to apply knowledge and demonstrate skills.

Certification assessments test the student over material outlined in the skills standards and taught using the curriculum materials and textbooks. When used with classroom performance evaluations, certification assessments provide a means of measuring occupational readiness.

Each of these components satisfies a unique purpose in competency-based education and reinforces the knowledge and skills students need to gain employment and succeed on the job.

Measuring Success

Evaluation is an important component of competency-based education. Pre-training assessments measure the student's existing knowledge prior to receiving instruction and ensure the student's training builds upon this knowledge base. Formative assessments administered throughout the training process provide a means of continuously monitoring the student's progress towards mastery.

Certification assessments provide a means of evaluating the student's mastery of knowledge and skills. Coaching reports communicate assessment scores to students and provide a breakdown of assessment results by standard area. The coaching report also shows how well the student has mastered skills needed to perform major job functions and identifies areas of job responsibility that may require additional instruction and/or training.

Radiology Aide
Assessment Information

What are the Radiology Aide assessments?

The Radiology Aide assessment is an end-of-program assessment for students in Radiology Aide programs. This assessment provides an indication of student mastery of knowledge and concepts necessary for success in careers in this area.

How were the assessments developed?

The assessments were developed by CareerTech Testing Center. Items were created and reviewed by a committee of subject matter experts.

The committee assigned frequency and criticality ratings to each skill, which determines the significance of each task for test development:

Frequency: represents how often the task is performed on the job. Frequency rating scales vary for different occupations. The rating scale used in this publication is presented below:

1 = less than once a week 2 = at least once a week 3 = once or more a day

Criticality: denotes the level of consequence associated with performing a task incorrectly. The rating scale used in this publication is presented below:

1 = slight 2 = moderate 3 = extreme

What does the assessment cover?

Specifically, the tests includes multiple-choice test items over the following areas:

Radiology Aide (55 questions)
Introduction to Radiology Science . . 13%
Safety 14%
Patient Care and Management 40%
Imaging Operation and Equipment . . 33%

What are the benefits of using these assessments?

Students receive a certificate for each assessment they pass. This certificate is included in the student's portfolio and used to communicate their mastery of the subject matter to potential employers.

When should the assessment be taken?

The CareerTech Testing Center recommends that students take this assessment as soon as possible after receiving all standards-related instruction, rather than waiting until the end of the school year.

Is the assessment timed?

No. However, most students finish the assessment within one hour.

What resources can students use on these assessments?

Students are allowed to use calculators and scratch paper on CTTC assessments; however, these items must be provided by the testing proctor and returned to the proctor be+ore the student's exam is submitted for scoring. Calculator apps on cell phones and other devices may not be used on these assessments.

What accommodations can be made for students with Individualized Education Plans (IEPs)?

Accommodations are allowed for students with an Individualized Education Plan. Examples of allowable accommodations include:

- **Extended time** — These assessments are not timed; therefore, students may take as much time as needed to finish. The assessment must be completed in one testing session.
- **Readers** — A reader may be used to read the assessment to a student who has been identified as needing this accommodation.
- **Enlarged text** — Students needing this accommodation can activate this feature by clicking the AA icon in the upper right corner of the screen.

What can students expect on Test Day?

All CTTC assessments are web-based and delivered exclusively by a proctor in the school's assessment center. The proctor **cannot** be an instructor or anyone who was involved with the student during instruction.

Assessments are delivered in a question-by-question format. When a question is presented, the student can select a response or leave the question unanswered and advance to the next question. Students may also fag questions to revisit before the test is scored. All questions must be answered before the test can be submitted for scoring.

After the assessment is scored, the student will receive a score report that shows the student's score on the assessment and how the student performed in each standard area.

Can students retake the test?

Students may retake the test unless their school or state testing policies prohibit retesting. Students who can retest must wait at least three days between test attempts.

Standards and Test Content
8544 Radiology Aide

Duty A: Introduction to Radiologic Science (7 questions)

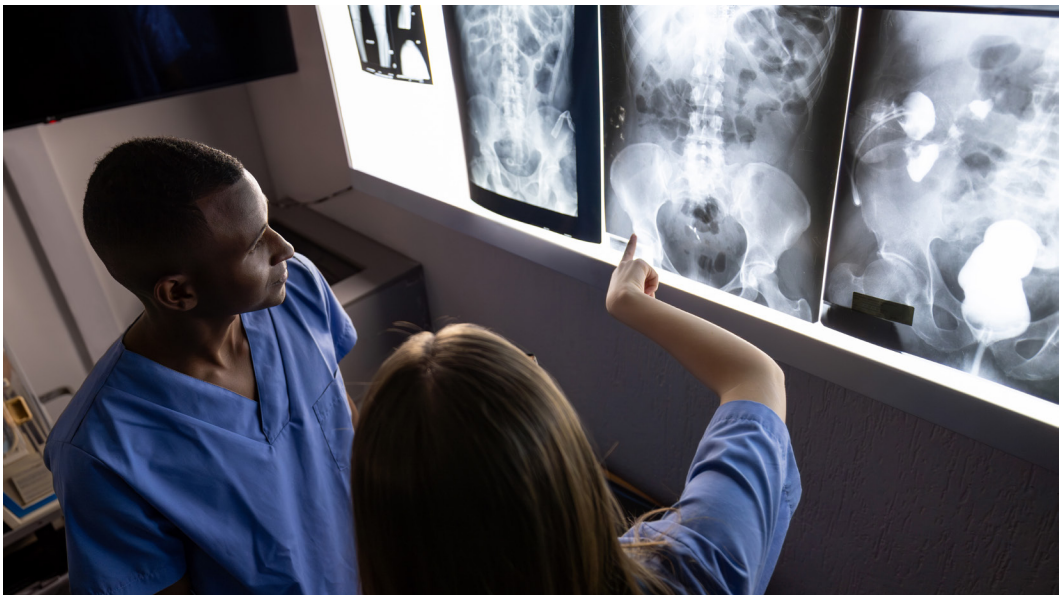
CODE	TASK	F	C
A.01	Describe the medical applications of radiation.	3	2
A.02	Discuss the discovery of x-rays.	1	1
A.03	Define core terms in radiology.	3	2
A.04	Identify the career opportunities and specialties within the radiologic technology field.	2	2
A.05	Describe the duties and functions of radiology and healthcare team members. • radiology aide • office/clinical procedures	2	2
A.06	Evaluate the varied roles of professional organizations in accreditation, certifications, representation and interdisciplinary relationships with radiologic technology.	1	1
A.07	Discuss the differences and strategies between critical thinking and problem-solving in clinical, ethical and technical decisions within radiologic sciences.	2	3
A.08	Describe the administration and organizational design of the radiology department within the broader hospital framework.	2	2
A.09	Discuss the core functions of management as applied to radiology administration.	1	1

Duty B: Safety (8 questions)

CODE	TASK	F	C
B.01	Identify radiation protection standards developed by advisory groups and regulatory agencies.	3	2
B.02	Discuss the principles of reducing exposure to radiation for healthcare workers and patients. • dose limits • ALARA • cardinal rules	3	3
B.03	Identify the various devices used to detect and measure exposure to ionizing radiation.	2	2
B.04	Discuss the general safety standards for handling the following: • flammable and combustible liquids and gases • chemicals • electrical hazards	2	3
B.05	Demonstrate the proper use and limitations of personal protective equipment.	3	3

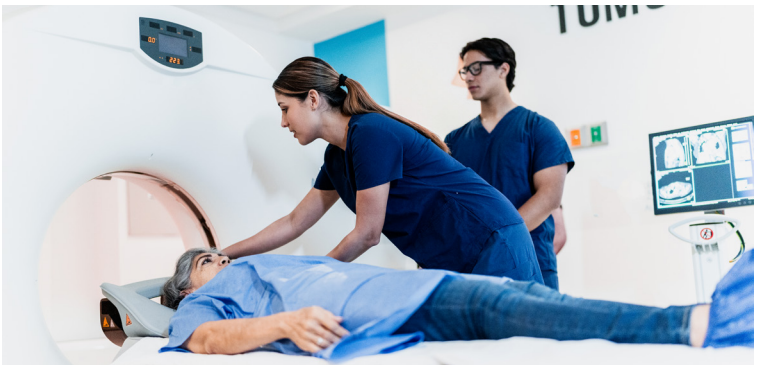
Duty C: Patient Care and Management (22 questions)

CODE	TASK	F	C
C.01	Demonstrate effective patient communication. • AIDET (Acknowledge, Introduce, Duration, Explanation, Thank)	3	2
C.02	Apply appropriate immobilization techniques for all patient demographics.	3	2
C.03	Describe how effective immobilization directly contributes to ensuring patient radiation safety and enhanced image quality.	3	3
C.04	Demonstrate the following aseptic techniques: • establish and maintain a sterile field • Surgical scrub steps • Contrast intravenous and intraarterial lines • gowning and gloving	3	3
C.05	Describe the special considerations for transferring and imaging a patient with the following: • chest tube • urinary catheter • nasogatric tube • urinary catheter	2	3
C.06	Describe the common types of enemas and the procedures for each one.	1	2
C.07	Identify the classifications of basic drugs.	1	2
C.08	List the methods and the six rights of drug administration.	2	2
C.09	Define core terms associated with pharmacology.	1	2
C.10	Summarize the uses and classifications of contrast studies and the variations in contrast agent effects.	2	2
C.11	Explain the identification and management of all contrast-related complications.	2	3
C.12	Demonstrate safe patient transfers, transport and mobility while identifying mitigating hazards in the radiographic environment.	3	3
C.13	Provide basic patient care, including IV management, hygiene assistance, and identifying situations requiring aid.	3	3
C.14	Respond effectively to patient distress and emergencies, and assist professional staff with critically ill or injured patients.	3	3



Duty D: Imaging Operation and Equipment (18 questions)

CODE	TASK	F	C
D.01	Discuss radiographic image quality based on key parameters and the factors that affect them.	2	2
D.02	Describe primary, scatter and remnant radiation, and the fundamentals of image production.	2	2
D.03	Identify and locate the generic components of a radiographic system. • x-ray tube • control console • x-ray table • wall stand • bucky holder	3	2
D.04	Describe the operation, manipulation, and appropriate use of various radiographic equipment. • tables • tube stands • the movement of the x-ray tube	3	3
D.05	Explain the purpose of the collimator and its importance in patient radiation protection.	3	3
D.06	Discuss the function of image receptor holders and the concept of alignment among radiographic system components.	3	3
D.07	Describe the use and purpose of the Automatic Exposure Control (AEC) system.	2	2
D.08	Describe the movement of the fluoroscopic tower.	2	2
D.09	Differentiate between major types of mobile imaging systems.	1	2
D.10	Identify the elements of the x-ray circuit and x-ray tube.	1	1
D.11	Discuss quality control measures to imagaing equipment and accessories.	2	2
D.12	Describe the elements and operation of fluoroscopy systems.	2	2
D.13	Discuss exposure factors and their effect on the final image.	2	2
D.14	Describe the basic construction and purpose of grids.	1	1
D.15	Discuss the computer processing and image display process.	1	1
D.16	Discuss how medical images are transferred, stored and remotely accessed. • PACs • MIMPS	2	2
D.17	Identify the differences between patient-related artifacts and equipment-related artifacts.	2	2



Abbreviations, Symbols and Acronyms

The following is a list of abbreviations, symbols and acronyms used in the Radiology Aide study guide and on the Radiology Aide assessment.

%	Percentage
AEC	Automatic Exposure Control
AIDET	Acknowledge, Introduce, Duration, Explanation, Thank
ALARA	As Low As Reasonably Achievable
DNR	Do Not Resucitate
EHR	Electronic Health Record
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
ICRP	International Commission on Radiological Protection
IV	Intravenous
MIMPS	Medical Image Management and Processing System
NRC	Nuclear Regulatory Commission
PAC	Picture Archiving and Communication System
PPE	Personal Protective Equipment

Test Taking Strategies

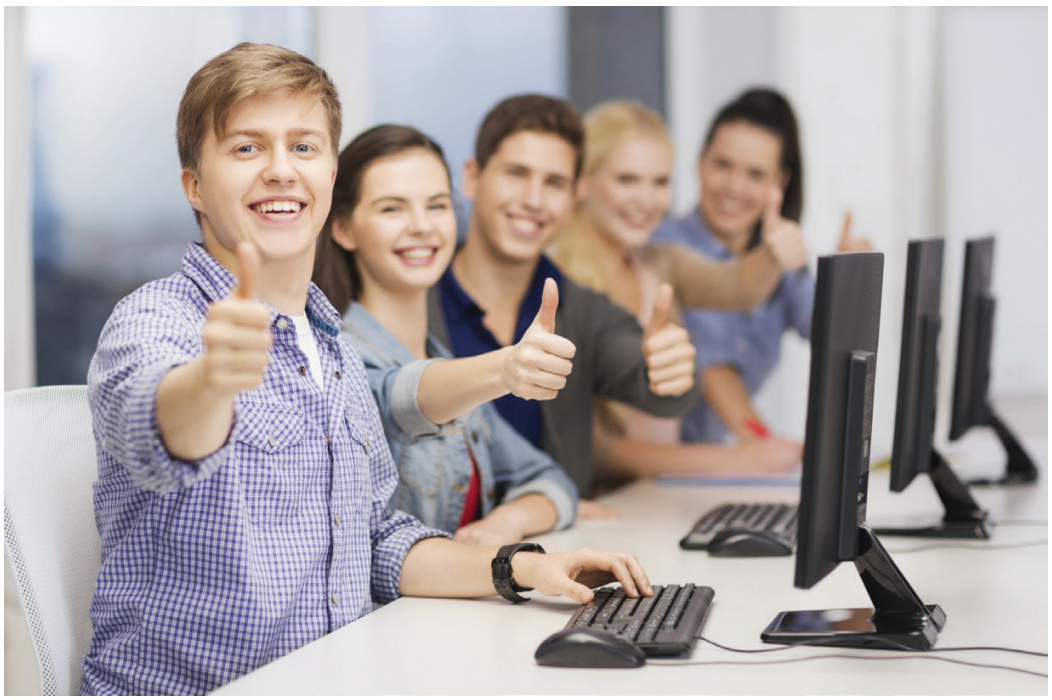
This section of the study guide contains valuable information for testing success and provides a common-sense approach for preparing for and performing well on any test.

General Testing Advice

1. Get a good night's rest the night before the test – eight hours of sleep is recommended.
2. Avoid junk food and "eat right" several days before the test.
3. Do not drink a lot or eat a large meal prior to testing.
4. Be confident in your knowledge and skills!
5. Relax and try to ignore distractions during the test.
6. Focus on the task at hand — taking the test and doing your best!
7. Listen carefully to the instructions provided by the exam proctor. If the instructions are not clear, ask for clarification.

Testing Tips

1. Read the entire question before attempting to answer it.
2. Try to answer the question before reading the choices. Then, read the choices to determine if one matches, or is similar to your answer.
3. Do not change your answer unless you misread the question or are certain that your first answer is incorrect.
4. Answer questions you know first, so you can spend additional time on the more difficult questions.
5. Check to make sure you have answered every question before you submit the assessment for scoring — unanswered questions are marked incorrect.



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