

CHAPTER 42  
MINIMUM CERTIFICATION STANDARDS FOR DIAGNOSTIC RADIOGRAPHERS,  
NUCLEAR MEDICINE TECHNOLOGISTS, AND RADIATION THERAPISTS

[Prior to 12/2/87, Health Department[470] Ch 42]

**641—42.1(136C) Purpose and scope.**

**42.1(1) Applicability.** Except as otherwise specifically provided, these rules apply to all individuals who operate as a diagnostic radiographer, nuclear medicine technologist, or radiation therapist as defined below.

The provisions of this chapter are in addition to, and not in substitution for, any other applicable portions of 641—Chapters 38 to 41.

**42.1(2) Definitions.** For the purpose of this chapter, the definitions of 641—Chapter 38 may also apply.

“*Approved course of study*” means a curriculum and associated training and testing materials which the department has determined are adequate to train students to meet the requirements of this chapter.

“*Chest*” is defined as the lung fields including the cardiac shadow, as taught in the approved limited radiography curriculum. Radiography of the shoulder, clavicle, scapula, ribs, thoracic spine and sternum for diagnostic evaluation of these body structures or chest radiography using anything other than a vertical cassette holder is not allowed under this body part classification for limited diagnostic radiographers. Limited diagnostic radiographers already approved in chest radiography may perform oblique, apical lordotic, and decubitus chest views under this definition upon completion of additional training approved by this agency.

“*Clinical education*” means the direct participation of the student in completion of diagnostic studies.

“*Continuing education course*” means a planned program of continuing education having sufficient scope and depth of a given subject area directly related to the field to form an educational unit that is planned, coordinated, administered, and evaluated in terms of educational objects and provides a defined level of knowledge or specific performance skill. This concept involves the organized presentation of a body of knowledge so that the subject matter is comprehensively covered in sufficient detail to meet the educational objectives of the course.

“*Contrast media*” means material intentionally administered to the human body to define a part(s) which is not normally visualized radiographically.

“*Diagnostic radiographer*” means an individual, other than a licensed practitioner or podiatric or dental assistant with radiography qualification, who applies X-radiation to the human body for diagnostic purposes while under the supervision of a licensed practitioner or registered nurse registered as an advanced registered nurse practitioner pursuant to Iowa Code chapter 152. The types are as follows:

1. “General diagnostic radiographer” applies X-radiation to any part of the human body.
2. “Limited diagnostic radiographer” applies X-radiation to not more than three of the following body parts: chest, extremities (upper and lower), spine, or sinus. This individual is restricted to performing radiography in that area of the facility specifically designed for X-ray. This individual may not perform pediatric radiography (children under three years of age) without additional training in pediatric radiography taken as a part of the basic limited training or a specifically approved training program (see 42.2(6)).

3. “Limited in-hospital radiographer” applies X-radiation as permitted in 42.3(1)“c.”

“*Diagnostic radiography*” means the science and art of applying X-radiation to human beings for diagnostic purposes other than in dental radiography. It shall include adjustment or manipulation of X-ray equipment and appurtenances including image receptors, positioning of patients and processing of films so as to materially affect the radiation exposure of patients.

“*In vitro*” means a procedure in which the radioactive material is not administered to a human being.

“*In vivo*” means a procedure in which the radioactive material is administered to a human being.

“*Lower extremities*” refers to those body parts from the distal phalanges of the foot to the head of the femur and its articulation with the pelvic girdle as taught in the approved limited radiographer curriculum. True hip radiographs are prohibited under this category for limited diagnostic radiographers. This definition applies to 641—Chapter 42 only.

“*Nuclear medicine procedure*” means any procedure utilizing radiopharmaceuticals for diagnosis or treatment of disease in human beings and any duties performed by the technologist during sealed source procedures and includes, but is not limited to:

1. Administration of any radiopharmaceutical to human beings for diagnostic purposes.
2. Administration of radioactive material to human beings for therapeutic purposes.
3. Use of radioactive material for diagnostic purposes involving transmission or excitation.
4. Quality control and quality assurance.

“*Nuclear medicine technologist*” means an individual, other than a licensed physician, who performs nuclear medicine procedures while under the supervision of a physician who is authorized by NRC or Iowa to possess and use radioactive materials.

“*Quality assurance*” means all aspects of a nuclear medicine program that ensure the quality of imaging and therapy procedures.

“*Quality control*” means specific tests and measurements that ensure the purity, quantity, product identity, and biologic safety of radiopharmaceuticals.

“*Radiation therapist*” means a person, other than a licensed physician, who performs radiation therapy technology under the supervision of a radiation oncologist.

“*Radiation therapy technology*” means the science and art of performing simulation radiography or applying ionizing radiation emitted from X-ray machines, particle accelerators, or radioactive materials to human beings for therapeutic purposes.

“*Radionuclide*” means a radioactive element or a radioactive isotope.

“*Radiopharmaceutical*” means a substance defined by the Food and Drug Administration as a radioactive drug.

“*Simulation radiography*” means the science and art of applying radiation to human beings for the purpose of localizing treatment fields and for treatment planning.

“*Simulation therapist*” means an individual, other than a physician, who applies radiation to human beings for the purpose of localizing treatment fields and for treatment planning.

“*Sinus*” as used in the limited radiographer curriculum refers to the paranasal sinuses only.

“*Special category course*” means those programs still related to health care but indirectly related to diagnostic radiography, nuclear medicine technology, or radiation therapy. Such programs are: venipuncture, CPR, educator’s programs, management programs, tumor boards, equipment training, personal improvement, for example.

“*Spine*” refers to the cervical, thoracic (dorsal), lumbar vertebrae and their articulations. It may also include the sacrum or coccyx and the sacral articulation with the pelvic girdle. True pelvis radiographs performed with the image receptor positioned perpendicular to the long axis of the torso are prohibited under this limited category. Lumbo-pelvic or full spine radiography may be performed if the long axis of the image receptor is positioned parallel with the long axis of the spine as taught in the approved limited radiographer curriculum.

“*Student*” means an individual enrolled in and participating in an approved course of study.

“*Supervision*” means responsibility for and control of quality, radiation safety and protection, and technical aspects of the application of ionizing radiation to human beings for diagnostic or therapeutic purposes.

“*Upper extremities*” refers to those body parts from the distal phalanges of the hand to the head of the humerus. These projections may include the acromioclavicular or glenoid-humeral areas as taught in the approved limited radiographer curriculum. True shoulder radiography that includes both distal and proximal ends of the clavicle is prohibited under this category for limited diagnostic radiographers. This definition applies to 641—Chapter 42 only.

“*X-radiation*” means penetrating electromagnetic radiation with energy greater than 0.1 kV produced by bombarding a metallic target with fast electrons in a high vacuum.

#### **641—42.2(136C) General requirements.**

##### **42.2(1) *Minimum eligibility requirements.***

- a. Graduation from high school or its equivalent.
- b. Attainment of 18 years of age.
- c. Ability to adequately perform necessary duties without constituting a hazard to the health or safety of patients or operators.

**42.2(2) *Disciplinary grounds and actions.*** The procedures for administrative enforcement actions are found in 641—38.9(136C). The following shall be grounds for disciplinary action involving possible probation, suspension or revocation of certification, or levying of fines:

- a. Operating as a diagnostic radiographer, nuclear medicine technologist, or radiation therapist without meeting the requirements of this chapter.
- b. Allowing any individual excluding a licensed physician to operate as a diagnostic radiographer, nuclear medicine technologist, or radiation therapist if that individual cannot provide proof of certification by the department.
- c. Failing to report to the department any individual whom the certificate holder knows is in violation of this rule.
- d. Submitting false information in order to obtain certification or renewal certification as a diagnostic radiographer, nuclear medicine technologist, or radiation therapist.
- e. Any action that the department determines may jeopardize the public, other staff, or certificate holder’s health and safety. These actions shall include but not be limited to:
  - (1) Any medical condition which may impair or limit the individual’s ability to perform radiography, nuclear medicine procedures, or radiation therapy;
  - (2) Activity related to illegal or improper use of drugs or other chemical substances;
  - (3) A misdemeanor or felony which may impair or limit the individual’s ability to perform radiography, nuclear medicine procedures, or radiation therapy;
  - (4) Any disciplinary action brought against the individual in connection with a certificate or license issued from a certifying or licensing entity.
- f. Performing procedures not allowed under the individual’s current certification.
- g. Failing to pay fees or costs required to meet the requirements of this chapter. The penalty for working without the required permit will be \$100 and suspension from performing radiography until the permit is issued.
- h. Failure to respond to an audit request or failure to provide proper documentation.

##### **42.2(3) *Continuing education.***

a. Each individual who is certified under these rules shall, during a two-year period, obtain continuing education credit as follows:

- (1) General diagnostic radiographer: 24 clock hours, 1.0 hour must be in radiation protection.
- (2) Limited in-hospital diagnostic radiographer: 24 clock hours, 1.0 hour must be in radiation protection.
- (3) Limited diagnostic radiographer: 12 clock hours, 1.0 hour must be in radiation protection.

(4) General nuclear medicine technologist: 24 hours total.

1. One clock hour in principles of radiation protection and exposure each year, a total of two hours each two-year period.

2. One clock hour in quality assurance each year, a total of two hours each two-year period.

3. The remaining 20 clock hours of continuing education in each two-year period may be in any other subjects directly related to nuclear medicine and approved by the department.

(5) Limited nuclear medicine technologists: 12 hours total, 1.0 hour must be radiation protection and 1.0 hour must be in quality assurance.

(6) Radiation therapist: proof of 24.0 clock hours of continuing education courses in subjects directly related to radiation therapy.

(7) Simulation therapist: proof of 24.0 clock hours of continuing education courses with at least 12.0 hours directly related to radiation therapy. 12.0 hours may be in specified diagnostic radiography courses.

*b.* Continuing education course approval.

(1) Thirty days prior to conducting a continuing education course, the sponsoring individual must submit the following:

1. The course objectives.

2. An outline of the course which sets forth the subject, the course content, and the length of the course in clock hours.

3. The instructor's name and short résumé detailing qualifications.

(2) Following its review, the department may, in consultation with or under predetermined guidance of the technical advisory committee, approve, disapprove, or request additional information on the proposed course.

(3) The department may, from time to time, audit the continuing education course to verify the adequacy of program content and delivery.

(4) Courses must be at least one clock hour in length and if lasting more than one hour, will be assigned credit in half-hour increments to the closest half-hour.

(5) No continuing education credit is approved for passing a certification examination.

*c.* Continuing education credit will be awarded under provisions of 42.2(3) by the department to individuals:

(1) Who have successfully completed a continuing education course which has been approved by the department.

(2) Who present a department-approved continuing education course to individuals certified in the presenter's field. Credit granted shall be at a rate of two times the amount of time it takes to present the course up to a maximum of 50 percent of the total hours required.

(3) Only once during a two-year period for the same continuing education course.

*d.* Continuing education must be directly related to the area of practice of the operator attending the program. Twenty-five percent of the total hours required may be in "special category."

*e.* Proof of continuing education must be maintained for at least three years. Proof of continuing education may be a sign-in sheet, certificate, or answer sheet. It must be signed and dated by the presenter, program representative, or the individual's supervisor. Individuals authorized for mammography must meet the records requirements in 641—41.6(136C) and 641—41.7(136C).

*f.* All continuing education requirements shall be completed during the two-year period prior to the certification continuing education due date.

g. Late submission of continuing education requirements.

(1) For any individual who completes the required continuing education before the continuing education due date but fails to submit the required proof within 30 days after the continuing education due date, the certification shall be terminated and the renewal fee will not be refunded.

(2) Any individual who fails to complete the required continuing education before the continuing education due date but submits a written plan of correction to obtain the required hours and the fee required in 641—paragraph 38.8(6) “c” shall be allowed no more than 60 days after the original continuing education due date to complete the plan of correction and submit the documentation of completion of continuing education requirements. After 60 days, the certification shall be terminated and the individual shall not function as a diagnostic radiographer, radiation therapist, or nuclear medicine technologist in Iowa.

(3) Once certification has been terminated, any individual who requests permission to reestablish certification within six months of the initial continuing education due date must submit proof of continuing education hours and shall submit a late fee as set forth in 641—paragraph 38.8(6) “c” in addition to the annual fee set forth in 641—paragraph 38.8(6) “a” in order to obtain reinstatement of certification.

**42.2(4) Recertification.**

a. If an individual allows the certification to expire for any reason or if any individual voluntarily terminates certification, the following will apply:

(1) Any individual who wishes to regain certification and makes application within six months of the termination date will be allowed to do so with no additional training or testing required.

(2) Any individual who wishes to regain certification after the six-month period will need to meet the current educational and testing requirements for that particular certification. Proof of possession of a previous certification may satisfy the training portion of this requirement.

(3) Any individual who has not renewed certification for at least five years and wants to regain certification, or who has not applied for certification within five years of the completion date of the original training course, will need to complete a recertification program approved by the department of not less than 24 contact hours for general certifications and 12 contact hours for limited certifications which specifically applies to the area of certification.

b. Recertification programs.

(1) The recertification program must review those basic principles necessary to ensure minimum competency in the certification area and must also include the satisfactory completion of a written examination. Both the program and the examination must acquire prior approval from the department. Courses designed for use in the recertification program will not qualify for continuing education credit for those individuals required to attend in order to recertify.

(2) If no approved programs are available, the department may require attendance for a minimum of 24 contact hours for general certifications and 12 hours for limited certifications at specific continuing education programs. The continuing education must be confined to subjects which apply to the area of certification limitation, if any, and would have to be completed within a specified time period.

c. Exemptions. Any or all of the above-mentioned requirements may be waived for an individual who has been actively employed in the certification area in another state, country, or federal institution or who can prove circumstances above and beyond the norm. These cases will be reviewed on an individual basis and the decision of the department shall be final.

d. Training programs. Rescinded IAB 4/3/02, effective 5/8/02.

e. Upon the completion of the training the following must be submitted:

(1) A statement of competency from the trainer.

(2) A statement of permission to allow a representative of the department to comprehensively evaluate whether the individual meets the training standard.

**42.2(5) Fees.** All individuals certified under this rule must pay fees as specified in 641—subrule 38.8(6).

**42.2(6) Training programs.**

a. Any individual wishing to train an individual as a diagnostic radiographer, nuclear medicine technologist, or radiation therapist must submit a training program to the agency for approval. The request must provide the following:

(1) An outline of the didactic and clinical studies to meet the requirements of 42.3(1), 42.4(2), or 42.5(2).

(2) Listed body parts to be taught if this is a limited radiography training program.

(3) Proof that the instructor meets the requirements of this chapter as a diagnostic radiographer, nuclear medicine technologist, radiation therapist or is a licensed physician trained in the specific area of competence.

(4) A time schedule of the training program. The projected completion date of the clinical portion of the program or course of study shall be within a time period equal to or less than twice that required for the original program or course of study.

(5) A description of the mechanism to be used to determine competency.

b. Upon the completion of the training program, the following must be submitted to the agency:

(1) A statement of competency from the trainer for each area completed.

(2) A statement of permission to allow a representative of the agency to comprehensively evaluate whether the individual meets the training standard.

**42.2(7) Requirements for operators of dual imaging devices.** When a unit is operated as a nuclear medicine imaging device, the operator must have a permit to practice as a nuclear medicine technologist and meet the requirements of 641—42.4(136C). When the unit is operated as a radiologic technology imaging device, the operator must have a permit to practice as a general diagnostic radiographer and meet the requirements of 641—42.3(136C). When a unit is operated in dual mode, the operator must have a permit to practice as a nuclear medicine technologist.

**42.2(8) Examinations.** All individuals seeking certification under 641—Chapter 42 must pass a written examination within six months of the date of the initial certification. The temporary six-month permit will be issued to allow the individual to practice under supervision of a licensed practitioner, an authorized user listed on a radioactive materials license, or a permitted individual with the permit in the same or higher category. The individual will be issued an annual permit upon passing the examination.

**641—42.3(136C) Specific requirements for diagnostic radiographers.****42.3(1) Training requirements.**

a. General diagnostic radiographer. Successful completion of a Joint Review Committee on Education in Radiologic Technology approved course of study or equivalent to prepare the student to demonstrate competency in the following areas:

(1) Radiation protection of patients and workers, including monitoring, shielding, units of measurement and permissible levels, biological effects of radiation, and technical consideration in reducing radiation exposure and frequency of retakes;

(2) Technique and quality control to achieve diagnostic objectives with minimum patient exposure, including X-ray examinations, X-ray production, films, screens, holders and grids, technique conversions, film processing, artifacts, image quality, film systems and control of secondary radiation for the specified category;

(3) Patient care including, but not limited to, aseptic techniques, emergency procedures and first aid, and contrast media;

(4) Positioning, including normal and abnormal anatomy and projections;

(5) Radiographic equipment and operator maintenance to include X-ray tubes, grids, standardization of equipment, generators, preventive maintenance, basic electricity, film processors and maintenance, collimators, X-ray control consoles, tilt tables, ancillary equipment, fluoroscopes and electrical and mechanical safety;

(6) Special techniques, including stereo, body section radiography, pelvimetry, image intensification, photo timing and mobile units; and

(7) Clinical experience sufficient to demonstrate competency in the application of the above as specified in the "Standards for an Accredited Education Program in Radiologic Sciences" as adopted by the Joint Review Committee on Education on Radiologic Technology.

*b.* Limited diagnostic radiographer.

(1) Completion of an approved course of study to prepare the student to demonstrate competency in the following areas:

1. Radiation protection of patients and workers including monitoring, shielding, units of measurement and permissible levels, biological effects of radiation, and technical considerations in reducing radiation exposure and frequency of retakes;

2. Technique and quality control to achieve diagnostic objectives with minimum patient exposure to include X-ray examination, X-ray production, films, screens, holders and grids, technique conversions, film processing, artifacts, image quality, film systems and control of secondary radiation for the specified category;

3. Patient care including, but not limited to, aseptic techniques, emergency procedures and first aid;

4. Positioning, including normal and abnormal anatomy and projections for the specific category;

5. Radiographic equipment and operator maintenance to include X-ray tubes, grids, standardization of equipment, generators, preventive maintenance, basic electricity, film processors and maintenance, collimators, X-ray control consoles, tilt tables, ancillary equipment, and electrical and mechanical safety;

6. Special techniques limited to those required by the specific category; and

7. Clinical experience sufficient to demonstrate competency in the application of the above as specified by the department. Clinical experience must be directly supervised by a two-year trained general radiographer, licensed physician, chiropractor, or podiatrist who physically observes and critiques the actual X-ray procedures.

8. Permission for a representative of the Iowa department of public health to comprehensively evaluate whether the individual meets the training standard.

(2) Training required for limited radiographers who wish to perform pediatric radiography. The training program must:

1. Be submitted to the agency for approval before training starts.

2. Be taught by a general radiographer.

3. Include 4.0 hours of additional anatomy and physiology, positioning, radiation protection, and technique that are specific to pediatric radiography.

4. Include clinical and film critiques in pediatric chest and extremities radiography, but not spinal radiography.

5. Upon completion, verify each participant's competency, in writing, to the agency.

*c.* Limited in-hospital diagnostic radiographer. An individual employed in a diagnostic radiography facility which has a workload of less than 5000 examinations per year and which provides 24-hour service in a hospital will be permitted to apply X-radiation to any part of the human body at that facility if the individual completes a training program recognized by the department, as outlined in 42.1(4)"*b*"(1) and submits a letter from a board-certified or board-eligible radiologist who verifies in writing the specific procedures the individual is competent to perform. The training program must cover the areas outlined in 42.1(4)"*b*," the anatomy and physiology of the entire body, positioning and techniques relative to the procedures to be performed, and appropriate clinical training which includes all parts of the human body. Training received under this subrule is specific to the facility and must be reevaluated by the department before an individual may transfer to another facility.

*d.* Certification by the American Registry of Radiologic Technologists or the American Registry of Clinical Radiography Technologists meets the minimum requirements of 42.3(136C).

**42.3(2) School accreditation.**

a. Graduates of schools accredited by the Joint Review Committee on Education in Radiologic Technology who have successfully completed an appropriate course of study in diagnostic radiography will be considered to meet the requirements of 42.3(1) "a."

b. Graduates of programs recognized by the Iowa department of public health in consultation with the professional societies and boards of examiners for appropriate course of study in diagnostic radiography will be considered to meet the requirements of this rule.

**42.3(3) Examinations.**

a. All individuals seeking to perform diagnostic radiography must, in addition to subrule 42.3(1), take and satisfactorily pass a written examination within six months of the issuance date of the temporary certification. Examination must include the following subject matter for each category of radiographer:

(1) General diagnostic radiographer and limited in-hospital radiographer: radiation protection, radiation physics, radiographic and fluoroscopic techniques, special procedures, patient care, positioning, equipment maintenance, anatomy, contrast media, physiology, quality control, radiographic processing and clinical experience.

(2) Limited diagnostic radiographer: radiation protection, radiation physics, radiographic techniques, patient care, positioning, equipment maintenance, anatomy, physiology, quality control, and radiographic processing and clinical experience for the specific permit to practice requested.

(3) Contents of the examinations will be established and periodically revised by the department in consultation with the technical advisory committee.

b. Examinations will be given by the department at least annually, or as necessary, at course of study location or other location determined by the department.

c. The department may accept, in lieu of its own examination, evidence of satisfactory performance in an examination given by an appropriate organization or testing service provided that the department finds the organization or service to be competent to examine applicants in the discipline of radiography. For purposes of this subrule, individuals who are registered as general diagnostic radiographers with the American Registry of Radiologic Technologists or American Registry of Clinical Radiography Technologists meet the testing requirements of 42.3(3).

d. Any individual certified under these rules and exempted from examination is exempted from examination requirements as long as the initial certification remains in effect.

**42.3(4) Exemptions.**

a. Students enrolled in and participating in an approved program or approved course of study for diagnostic radiography, or an approved school of medicine, osteopathy, podiatry, and chiropractic who, as a part of their course of study, apply ionizing radiation to a human being while under the supervision of a licensed practitioner.

b. Licensed practitioners as defined in 641—Chapter 38.

c. Individuals who operate processors only.

**641—42.4(136C) Specific requirements for nuclear medicine technologists.****42.4(1) Specific eligibility requirements.**

a. Any individual who is registered in nuclear medicine technology with the following organizations may meet the education and testing requirements of this rule.

(1) American Registry of Radiologic Technologists.

(2) Nuclear Medicine Technology Certification Board.

(3) American Society of Clinical Pathologists.

b. Any individual, other than a licensed physician, who has completed all educational requirements of this rule but has not yet successfully completed the required examination will be issued temporary certification valid for one year from completion of a training program approved by the department.

**42.4(2) Training requirements.**

*a.* General nuclear medicine technologist. Successful completion of a Joint Review Committee on Educational Programs in Nuclear Medicine approved course of study or equivalent designed to prepare the student to demonstrate competency in the following:

- (1) Basic anatomy, physiology, and pathology.
- (2) Intravenous injections and radiopharmaceutical chemistry.
- (3) Radiation physics and mathematics.
- (4) Nuclear instrumentation.
- (5) Radiation biology.
- (6) Radiation protection and radiation protection standards and codes.
- (7) Laboratory procedures and techniques (in vivo and in vitro).
- (8) Clinical application of radiopharmaceuticals used for diagnostic and therapeutic uses and duties performed by the technologist during sealed source procedures.
- (9) Records and administrative procedures.
- (10) Medical ethics.
- (11) Patient care.

*b.* Limited nuclear medicine technologist. Successful completion of a department-approved training program that prepares the student to demonstrate competency in a specified area. Each program shall include the items in 42.4(2)“*a*” that are specific to the limited area. Included are laboratory technologists who perform nuclear medicine procedures unless the material handled is regulated under 641—paragraph 39.4(22)“*i*.”

*c.* Graduates of programs recognized by the department in consultation with the professional societies and others as being adequate and appropriate courses of study in nuclear medicine technology may be considered to meet the requirements of this subrule.

*d.* Clinical experience must be directly supervised by a certified nuclear medicine technologist or by a physician who appears as an authorized user on an Iowa, agreement state, or U.S. Nuclear Regulatory Commission radioactive materials license. Quality assurance and quality control experience may be directly supervised by a pharmacist who appears as an authorized nuclear pharmacist on an Iowa, U.S. Nuclear Regulatory Commission, or agreement state radioactive materials license.

**42.4(3) Examinations.**

*a.* Any individual, other than a licensed physician, seeking certification as a general nuclear medicine technologist shall, in addition to the requirements of 42.4(2) successfully complete a written examination including the subject matter specified in 42.4(2)“*a*.” The following organizations offer approved general examinations:

- (1) American Registry of Radiologic Technologists.
- (2) Nuclear Medicine Technology Certification Board.

*b.* Any individual certified under these rules shall be exempt from the examination requirements as long as the original certification remains in effect.

*c.* Any individual, other than a licensed physician, seeking certification as a limited nuclear medicine technologist shall, in addition to the requirements of 42.4(2)“*b*,” successfully complete a written examination approved by the department which includes the subject matter specified in 42.4(2)“*b*.”

*d.* Any individual holding a temporary certification must successfully complete an approved examination within six months of the issuance date of the temporary certification.

**42.4(4) Exemptions.**

*a.* Students enrolled in and participating in an approved program or approved course of study for nuclear medicine technology or an approved school of medicine, osteopathy, podiatry, or chiropractic who, as a part of their course of study, administer radioactive material to a human being while under the supervision of a licensed physician who appears as an authorized user on an Iowa, agreement state, or NRC radioactive materials license.

*b.* A licensed physician who appears as an authorized user on an Iowa or NRC radioactive materials license.

**641—42.5(136C) Specific requirements for radiation therapists.****42.5(1) Specific eligibility requirements.** Each individual shall meet one of the following:

*a.* Any individual who is registered in radiation therapy with the American Registry of Radiological Technologists in radiation therapy meets the education and testing requirements of this rule.

*b.* Any individual, other than a licensed physician, who has completed all educational requirements of this rule but has not successfully completed the required examination will be issued temporary certification valid for one year from the date of completion of a training program approved by the department.

**42.5(2) Training requirements.**

*a.* General radiation therapist. Successful completion of a Joint Committee on Education in Radiologic Technology approved course of study or equivalent designed to prepare the student to demonstrate didactic and clinical competency in radiation therapy including, but not limited to, anatomy, physiology, radiation physics, radiation protection and exposure, quality assurance, radiation oncology treatment techniques, dosimetry, radiation oncology and pathology, radiology, oncologic patient care and management.

*b.* Limited radiation therapist. Successful completion of a training program approved by the department to prepare the student to demonstrate competency in a specified area only. This includes the simulation therapist. Each program shall include the items in 42.5(2)“*a*” that are specific to the limited area.

*c.* Graduates of programs recognized by the department in consultation with the professional societies and others as being adequate and appropriate courses of study in radiation therapy technology may be considered to meet the requirements of this subrule.

*d.* Clinical experience must be directly supervised by a radiation therapist or radiation oncologist.

**42.5(3) Examinations.**

*a.* Any individual, other than licensed physicians, seeking certification as a radiation therapist shall, in addition to the requirements of 42.5(2), satisfactorily complete a written examination in radiation therapy technology approved by the department. An approved examination is offered by the American Registry of Radiologic Technologists.

*b.* Any individual certified under these rules and exempted from examination is exempt from examination requirements as long as the initial certification remains in effect.

*c.* Any individual seeking to perform simulation radiography only must successfully complete an approved examination in either diagnostic radiography or radiation therapy.

*d.* Any individual holding a temporary certification must successfully complete an approved examination within six months of the issuance date of the temporary certification.

**42.5(4) Exemptions.**

*a.* Students enrolled in and participating in an approved program or approved course of study for radiation therapy technology or an approved school of medicine, osteopathy, podiatry, or chiropractic who, as a part of their course of study, administer radiation therapy to a human being while under the supervision of a licensed physician in the state of Iowa.

*b.* A licensed physician in the state of Iowa.

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\*\*Subrule 42.1(4)"b"(4) is rescinded two years subsequent to the effective date of rule 42.1(136C).

◊Two or more ARCs.