

TITLE 12. NATURAL RESOURCES
CHAPTER 2. RADIATION REGULATORY AGENCY
MEDICAL RADIOLOGIC TECHNOLOGY BOARD OF EXAMINERS

Authority: A.R.S. § 32-2803 et seq.

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ARTICLE 1. GENERAL PROVISIONS

R12-2-101. Definitions

The definitions in A.R.S. § 32-2801 apply to this Article. In addition, the terms in this Chapter have the following meaning, unless the context otherwise requires:

“Assistance” means any activity except the following: Positioning of the patient and x-ray tube, selecting technical settings, and exposing a patient to x-rays.

“Certification” means the process by which the Board grants permission and recognition to an individual to engage in radiologic technology upon finding the individual has met the qualifications specified by statute and rule.

“Chest radiography” means radiography performed to visualize the heart and lungs only.

“Contrast media” means material intentionally administered to the human body to define a part or parts that are not normally radiographically visible.

“Diagnostic application” means the use of ionizing radiation for diagnostic purposes, including but not limited to, measuring and positioning patients or human tissue, selecting technical settings on x-ray equipment, and making x-ray exposures.

“Extremity” means the shoulder girdle to the phalanges and the lower two-thirds of the femur to the phalanges.

“Foot” means the distal part of the human leg upon which an individual stands and walks.

“Practical radiologic technologist” for purposes of this Chapter is equivalent to “practical technologist in radiology”; however, this title is further defined as a person authorized to use radiography, not including fluoroscopy and the use of contrast media, and limited to the chest and extremities, on humans, at the direction of a licensed practitioner; unless

The person is certified as a practical radiologic technologist in podiatry, in which case the person is limited to radiography of the foot and leg; or

The person is certified as an “unlimited” practical radiologic technologist, in which case the person is not limited to radiography of the body areas in this definition.

“Practical radiologic technologist in podiatry” for purposes of this Chapter is equivalent to “practical technologist in podiatry.”

“Practical radiologic technology” means radiography limited to the chest or extremities and not including the use of fluoroscopy and the use of contrast media. For purposes of this Chapter “practical radiologic technology” is equivalent to “practical technology in radiology.”

“Radiograph” means the record of images which represents anatomical details of the part radiographically examined and is formed by the differential absorption of ionizing radiation within the part.

“Radiography” means the use of ionizing radiation in making radiographs.

“Special permit” means a certificate issued by the Board exempting an individual from the specific provisions of A.R.S. §§ 32-2802 through 32-2813.

“Specific direction” means the application of x-radiation to a specific area of the human body for diagnostic purposes while under the specific supervision of a licensed practitioner.

“Temporary certificate” means a certificate issued by the Board to any person who has completed a training program approved by the Board and whose certification is pending.

“Therapeutic application” means the use of ionizing radiation including, but not limited to, setting up the treatment position, delivering the required dose prescribed by the physician, certifying the record of the technical details of the treatment, selecting the required filter and treatment distance, making beam directional shells and molds, using diagnostic x-ray equipment for tumor localization, assisting the physicist in calibration procedure, and assisting in treatment planning procedures. Therapeutic application does not include taking x-rays for diagnostic purposes.

“Therapeutic purpose” means the use of x-radiation to treat human disease.

“X-radiation” means penetrating electromagnetic radiation with wave-lengths shorter than those of visible light that is usually produced by bombarding a metallic target with fast electrons in a high vacuum, creating photons that originate from the extranuclear part of the atom.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1). Amended by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-102. Certificate Granting Bodies

For the purpose of A.R.S. § 32-2812(C), the Board shall maintain a list of approved certificate granting bodies in the field of Radiologic Technology.

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). New Section R12-2-102 adopted effective August 24, 1981 (Supp. 81-4). Correction (Supp. 81-6). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-103. Communications

Any person interested in providing or receiving information concerning these rules or other matters should contact the Medical Radiologic Technology Board of Examiners.

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). New Section R12-2-103 adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-104. Approval of Radiologic Technology Schools

- A. An applicant seeking approval for a proposed radiologic technology school shall apply by letter and shall address all of the concerns listed for school approval in A.R.S. § 32-2804.
- B. The Board shall review and approve a school application according to the schedule in R12-2-301.
- C. The Board shall maintain a list of radiologic technology schools approved according to A.R.S. § 32-2804.

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). Emergency expired. New Section adopted by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-105. Reserved

R12-2-106. Reserved

R12-2-107. Emergency expired

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). Emergency expired.

R12-2-108. Emergency expired

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). Emergency expired.

ARTICLE 2. APPLICATION AND CERTIFICATION OF TECHNOLOGISTS

R12-2-201. Applications

With respect to the application procedure outlined in A.R.S. § 32-2812(A) and (B):

1. The Board accepts a passing score on the high school equivalency test (G.E.D.) as evidence of successful completion of high school or its equivalent.
2. On a notarized Board application form for certification, or as an attachment to a completed and notarized Board application, an applicant shall provide the following information:
 - a. Copy of current American Registry of Radiologic Technologists (ARRT) wallet card;
 - b. Copy of any degree, diploma, or certificate from an approved radiologic or practical radiologic technology school;
 - c. Photo;
 - d. Certification fee;
 - e. Name, address, and telephone number;
 - f. Birth date, sex, and social security number;
 - g. Purpose of application and current licensure or certificate number, if applicable;
 - h. Employment information for the last three years;
 - i. Education information;
 - j. Criminal, moral, license/certification history; and
 - k. Signature and date of signature of the applicant

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). New Section R12-2-201 adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-202. Qualifications

- A. The Board shall issue a radiologic technologist certificate if the applicant meets the qualifications for a radiologic technologist certificate prescribed in A.R.S. § 32-2812 or the qualifications for a temporary radiologic technologist certificate prescribed in A.R.S. § 32-2814.
- B. The Board shall issue a practical technologist in radiology certificate if the applicant has passed an examination approved by the Board and has completed a Board-approved program of limited practical technology in radiology. An applicant shall be notified by the Board of the time and place of the next examination, if the applicant fails the examination.
- C. An applicant or an inactive certificate holder who has not practiced radiologic technology during the prior three years shall pass an examination approved by the Board before certification.

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). New Section R12-2-202 adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-203. Examination Failures

Upon failing the certification exam a third time, a radiologic or a practical radiologic technologist applicant shall repeat the entire course of training prescribed for the specified certificate.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-204. Prohibitions and Limitations

- A. The practice of radiologic technology includes the direct application of x-radiation, technical instruction, and supervision of diagnostic and therapeutic applications.
- B. The practical radiologic technology certificate, issued after August 27, 1978, authorizes the practical radiologic technologist to perform only:
 1. Radiography of the chest, involving the heart and lungs;
 2. Radiography of the upper extremities, excluding the proximal one-third of the humerus; or
 3. Radiography of the lower extremities, excluding the upper one-third of the femur.
- C. In addition to the anatomical limitation prescribed in subsection (B), the practical radiologic technologist is prohibited from performing any radiography involving the use of contrast media.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-205. Certificate Expiration

Failure to pay the renewal fee for certification, as specified in R12-2-206, on or before the certificate's expiration date will result in the expiration of the certificate. An expired certificate cannot be reinstated. An individual who fails to renew a certificate in a timely manner, shall reapply according to R12-2-201.

Historical Note

Adopted as an emergency effective May 9, 1978, pursuant to A.R.S. § 41-1003, valid for only 90 days (Supp. 78-3). New Section R12-2-205 adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-206. Fees

The certification renewal fee adopted by the Board is \$60. The initial application fee is specified in A.R.S. § 32-2812.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-207. Changes of Name or Address; Duplicate Certificates

- A. A holder of a certificate shall notify the Board in writing of any change in name or address within 60 days of the change. A holder of a certificate requesting a change of name on a certificate shall submit the certificate containing the incorrect name to the Board before the Board issues a corrected certificate.
- B. A holder of a certificate shall receive a duplicate certificate upon submitting to the Board a notarized statement describing, to the best of the certificate holder's knowledge, the circumstances of the loss or destruction of the original certificate.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

ARTICLE 3. LICENSING TIME-FRAMES**R12-2-301. Licensing Time-frames**

- A. Within 30 days of receiving an initial or a renewal certificate or permit application package, the Board shall notify the applicant of any deficiencies found in the package. The Board shall provide a written comprehensive list of the deficiencies to the applicant. The 30-day time-frame for determining administrative completeness is suspended from the date the deficiency notice is mailed until the date that the Board receives all missing information from the applicant. If an applicant fails to supply the missing information or to request an extension of response time within 90 days from the date of the deficiency notice, the Board shall consider the application abandoned and require a new application with all appropriate fees.
- B. The Board shall render a certification or permit decision within 30 days after completion of the administrative completeness review time-frame, unless an extension of 15 days is agreed to by the applicant. If deficiencies are found in the application package, the Board shall make a written comprehensive request for additional information from the applicant. The 30-day time-frame for substantive review is suspended from the date the request is mailed until the date that the Board receives additional information from the applicant. If an applicant fails to respond to the written request or to request an extension of response time within 90 days of the notice, the Board shall consider the application abandoned and require a new application with all appropriate fees.
 1. If an applicant is found to be ineligible, the Board shall provide the applicant a written notice of denial explaining:
 - a. The reason for the denial with citation to supporting statutes or rules;
 - b. The applicant's right to seek an appeal of the denial; and
 - c. The time periods for appealing the denial.
 2. If an applicant is found to be eligible, the applicant shall be notified and provided a certificate or permit number.
- C. Within 60 days of receiving a school application package, the Board shall notify the applicant of any deficiencies found in the package. The Board shall provide a written comprehensive list of the deficiencies to the applicant. The 60-day time-frame for determining administrative completeness is suspended

from the date the deficiency notice is mailed until the date that the Board receives all of the missing information from the applicant. If an applicant fails to supply the missing information or to request an extension of response time within 90 days from the date of the deficiency notice, the Board shall consider the application abandoned and require a new application with all appropriate fees.

- D.** The Board shall render a decision regarding school approval within 60 days after the completion of the administrative completeness review time-frame, unless an extension of 30 days is agreed to by the applicant. If deficiencies are found in the application package, the Board shall make a written comprehensive request for additional information from the applicant. The 60-day time-frame for substantive review is suspended from the date the request is mailed until the date that the Board receives all additional information from the applicant. If an applicant fails to respond to the written request or to request an extension of response time within 90 days of the notice, the Board shall consider the application abandoned and require a new application with all appropriate fees.
 - 1. If an applicant is found to be ineligible, the Board shall provide the applicant a written notice of denial explaining:
 - a. The reason for the denial with citation to supporting statutes or rules;
 - b. The applicant’s right to seek an appeal of the denial; and
 - c. The time periods for appealing the denial.
 - 2. If an applicant is found to be eligible, the applicant shall be notified and the application shall be provided to the Board for approval.
- E.** For the purposes of A.R.S. Title 41, Chapter 6, Article 7.1, the Board establishes the following time-frames in days:
 Certification, Permit, and School Approval Time-frames

<i>Type of Application</i>	<i>Administrative Completeness Review Time</i>	<i>Substantive Review Time-frame</i>	<i>Overall Time-frame</i>
Certification or Permit	30	30	60
School Approval	60	60	120

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Section repealed; new Section adopted effective December 9, 1998 (Supp. 98-4).

R12-2-302. Repealed

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Repealed effective December 9, 1998 (Supp. 98-4).

ARTICLE 4. SCHOOLS OF PRACTICAL RADIOLOGIC TECHNOLOGY

R12-2-401. Course Time-frames

The administrator of a school of practical radiologic technology shall ensure that the time-frame for the course of study shall not be less than six months or more than 24 months for completion of 210 hours of didactic training and 480 hours clinical training.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1). Amended by final rule-making at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-402. Clinical Training

- A.** A school may provide clinical training in one general facility or two specific clinical facilities.
- B.** Types of clinical training facilities:
 - 1. “General clinical facility” means a hospital, clinic, or doctor’s office that provides clinical training in both chest and extremity radiography. The clinical training shall consist of a minimum of 12 examinations per day per student, of which 30 percent are chest examinations and 70 percent are extremity examinations.
 - 2. “Specific clinical facility” means a hospital, clinic, or doctor’s office that provides clinical training in chest or extremity radiography. A specific clinical training program shall include a minimum of 12 examinations per day per student. The training period at a specific clinical facility devoted to chest examinations shall not exceed three weeks. The training period at a specific clinical facility devoted to extremity examinations shall not exceed nine weeks.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-403. Equipment and Facilities

- A.** A school is not required to have an energized laboratory and equipment, but if utilized, the laboratory and equipment shall conform to Arizona Radiation Regulatory Agency rules.
- B.** A school shall maintain a library of current books, journals, and other reference material commonly used in and related to the curriculum and profession.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4). Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-404. Program Administration

- A.** One or more individuals may be responsible for the school’s administrative, supervisory, or educational duties. However, these responsibilities shall be clearly stated in the school’s administrative policies.
- B.** The following personnel shall meet the listed minimum requirements:
 - 1. The Program Director shall be responsible for the radiography educational program, and be one of the following:
 - a. An Arizona certified radiologic technologist with a minimum of two years of post certification experience and two years of teaching experience in a diagnostic radiologic technology program or equivalent, as determined by the Board, or its duly authorized representative;
 - b. A radiologic physicist certified by the American College of Radiology or equivalent, as determined by the Board, or its duly authorized representative, with at least two years of experience as an instructor in an academic course of study in diagnostic radiologic technology or equivalent, as determined by the Board, or its duly authorized representative; or
 - c. A radiologist certified by the American College of Radiology, or equivalent, as determined by the Board, or its duly authorized representative, with at least two years of experience as a lecturer in an academic course of study in diagnostic radiologic technology or equivalent, as determined by the Board, or its duly authorized representative.
 - 2. An instructor:

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- a. An instructor shall be qualified through academic preparation and experience to teach the assigned subjects, as determined by the Board, or its duly authorized representative. An instructor who is an Arizona certified radiologic technologist shall teach the following subjects:
 - i. Adult and pediatric positioning (radiologic),
 - ii. Physics and technical factors,
 - iii. Film processing,
 - iv. Quality control,
 - v. Film critique,
 - vi. Survey of human disease, and
 - vii. Radiation protection.
- b. A physician or other health professional shall teach a survey of human disease and a physicist or a radiologist shall teach radiation protection, quality control, and physics.
3. Clinical supervision shall be provided by an individual who is:
 - a. An Arizona certified radiologic technologist with minimum of two years of post-certification experience; and
 - b. Available during the training period in the clinical area when radiography procedures are being performed.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4).

Amended by final rulemaking at 5 A.A.R. 1008, effective

March 18, 1999 (Supp. 99-1).

R12-2-405. Didactic Training

The required subjects and their minimum hours are as follows:

1. Professional ethics (five hours).
 - a. Definition of ethics, nature of ethics, and value of ethics to the practical technologist, patient, and medical profession;
 - b. Professional secrecy and confidential knowledge regarding patients, physicians, and institutions;
 - c. Practical technologist relationship to patients, other technologists, radiologists, attending physicians, and other members of the medical staff.
2. Office procedures (five hours).
 - a. An instructor shall stress office professionalism, including action, appearance, and speech. Special attention shall be given to handling telephone conversations so that essential information is obtained when scheduling radiography;
 - b. Legal and ethical problems involving loan of radiographs, ordering examinations, ownership of equipment, visitors in the radiographic rooms, records, and use of equipment.
3. Anatomy, physiology, and medical terminology.
4. Adult and pediatric positioning (30 hours).
 - a. General positioning nomenclature and terminology. An instructor shall familiarize each student with the terms: anterior, posterior, lateral, oblique, caudal, cephalad, tangential, supine, prone, upright, medial, flexion, extension, adduct, abduce and other terms used to correctly position patients for radiography;
 - b. Procedure comprehension. Under classroom conditions, an instructor shall train each student so that the student is able to describe the anatomy visualized; describe the positions used, in terms of direction of the central ray and anatomical area of interest; name the size of film ordinarily used; describe patient preparation, if necessary; describe the special procedures applicable to radiographing specific regions of the body; identify radiographs of the basic radiographic positions; label the anatomic parts; explain variations in technical factors required for differences in patient habitus and similar anatomical areas of interest having different density and radiographic obstructions such as casts; explain how to avoid degradation of image quality from patient motion; and; describe variations in tube-film placement required to compensate for a patient's immobility.
5. Physics and technical factors (50 hours).
 - a. The structure of matter: the atom, elements, compounds, substances, mixtures, and modes of ionization.
 - b. Production and properties of x-rays: nature of electromagnetic radiation, production of x-rays, interactions of x-ray with matter, detection of ionizing radiation, and specification of the x-ray beam.
 - c. X-ray tubes: early x-ray tubes, modern x-ray tubes, stationary anode tubes, rotating anode tubes, types of tube cooling, tube housings and beam restricting systems, x-ray tube characteristics, focal spots, x-ray tube rating charts, and tube cooling charts.
 - d. Radiographic algorithms of a latent image and the prime factors of radiography (milliamperage, time, distance, and kilovoltage).
 - e. Factors affecting radiographic quality (density, detail, contrast distortion, and magnification) as related to chest and extremities.
 - f. Calibration, heat loading of x-ray tubes, conditions influencing choice of exposure factors, filters, grids, cones, cylinders, diaphragms, calipers, cassettes, film holders, technique charts, and identification system.
 - g. Discussions, problems, and experiments related to time, source image receptor distance, milliamperage, peak kilovoltage, and the relationships that can be established with combinations of each of these parameters, shall be provided to each student.
6. Processing (15 hours).
 - a. Darkroom construction, equipment, and arrangement; illumination and test for illumination, and x-ray film: handling, developing, rinsing, fixing, washing, and drying.

- b. Preparation of solutions, types, care of processing apparatus, automatic processing, reduction of overexposed and underexposed radiographs, and film artifacts and their uses.
7. Quality control (10 hours). An instructor shall train each student in the following subject areas: evaluation of film system procedures, radiographic machines, image quality, film screens, film holders, and grids.
8. Film critique (20 hours).
 - a. Patient's relevant clinical data: reasons for radiographic examination (pathology) and assessment of the patient during the radiographic examination.
 - b. Technique employed: technical factors and source image receptor distance.
 - c. Collimation and shielding: film size, field size, shielding, and markers.
 - d. Positioning: basic positioning and devices.
 - e. Anatomy: radiographic anatomy and anatomical anomalies.
 - f. Radiographic quality: density, contrast, resolution, distortion and magnification, fog, grids, film screens, film processing, and image artifacts.
9. Survey of diseases (five hours). Disease and injury encountered in the radiography of chest and extremities.
10. Nursing procedures (10 hours). An instructor shall train each student in patient care, including emergency procedures.
11. Radiation protection (30 hours).
 - a. Atomic structure, properties of radiation, modes of x-ray production, x-ray interaction with matter (absorption processes), units of radiation exposure and dosage, personal dosimetry and survey instruments, mechanisms of biological damage (stochastic and nonstochastic effects).
 - b. History and basic principles of radiation protection, standards for protection against ionizing radiation, including the principles of "ALARA" (As Low As Reasonably Achievable); methods for reducing exposure to personnel and patients, including the correct use of collimator, filtration, proper kilovoltage and milliamperage, time settings; formulation of x-ray exposure techniques; and special radiation protection measures for x-ray examinations. An instructor shall demonstrate the importance of time, distance and shielding, and scattering of x-rays.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4).
Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

R12-2-406. School Approval

- A. An applicant seeking to open a Practical Radiologic Technology School shall apply to the Board by letter and shall address all of the issues in R12-2-401 through R12-2-405.
- B. The Board shall review a school application in a timely manner as required in R12-2-301 and approve or deny the application.
- C. The Board shall maintain a list of approved schools.

Historical Note

Adopted effective August 24, 1981 (Supp. 81-4).
Amended by final rulemaking at 5 A.A.R. 1008, effective March 18, 1999 (Supp. 99-1).

ARTICLE 5. NUCLEAR MEDICINE TECHNOLOGIST

Article 5, consisting of R12-2-501 through R12-2-506, made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-501. Definitions

"ARRT" means the American Registry of Radiologic Technologists.

"ASCP" means the American Society of Clinical Pathology.

"Authorized user" means a physician licensed in Arizona to practice medicine and who is identified as:

An authorized user on an Agency, Nuclear Regulatory Commission (NRC), or Agreement State license that authorizes the specified medical use; or

A user in a medical use board scope program, licensed by the Agency, NRC, or Agreement State to select its own authorized users.

"Board" means the Medical Radiologic Technology Board of Examiners.

"Brachytherapy" means a method of radiation therapy in which a sealed source or group of sealed sources is used to deliver beta or gamma radiation at a distance of up to a few centimeters, by surface, intracavitary, intraluminal, or interstitial application.

"Certification" means the process by which the Board grants permission and recognition to an individual to engage in nuclear medicine technology upon finding the individual meets the qualifications specified by statute and rule.

"Certified nuclear medicine technologist" means a person who:

Has obtained certification from the Board in accordance with this Article but does not mean a licensed practitioner who performs in-vitro detection and measurement of radioactivity; or

Administers radiopharmaceuticals to human beings for diagnostic or therapeutic purposes; or with Board-approved training, performs the CT portion of a PET/CT scan while under the general supervision of a licensed practitioner.

"Diagnostic dosage" means a prescribed amount of a radionuclide or radiopharmaceutical, which is used for a diagnostic purpose.

"Direct supervision" means an authorized user who is: personally aware of, and maintains independent professional responsibility for, the procedure intended for a given patient; present in the facility; and available for immediate assistance.

"General supervision" means guidance, direction, and instruction by an authorized user who is available, but not necessarily within the supervised individual's place of employment.

"Immediate supervision" means in-room presence for instruction, direction, and guidance by an authorized user who is available to assume control of the given procedure.

"Medical use" means the intentional internal or external administration of byproduct material or the radiation from byproduct material to patients or human research subjects under the supervision of an authorized user.

"Misadministration" means:

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The administration of a radiopharmaceutical or the radiation from a sealed source, administered for therapy purposes and involving:

- The wrong radiopharmaceutical or sealed source;
- The wrong patient;
- The wrong route of administration; or
- A dosage that differs from the prescribed dosage by 20%; or

The administration of a diagnostic dosage of a radiopharmaceutical involving:

- The wrong patient;
- The wrong radiopharmaceutical;
- The wrong route of administration; or
- A dosage to an individual that exceeds 5 rems effective dose equivalent or 50 rems dosage equivalent to any individual organ; or

A therapeutic radiation dose from a sealed source such that errors in the source calibration, time of exposure, and treatment geometry result in a calculated total treatment dose differing from the final, prescribed total treatment dose by more than 10%.

“NMTCB” means the Nuclear Medicine Technology Certification Board.

“Nuclear medicine technologist” means a person who uses radiopharmaceutical agents on humans for diagnostic or therapeutic purposes. A.R.S. § 32-2815.

“Radionuclide” means a radioactive element of a radioactive isotope.

“Radiopharmaceutical” means any drug that exhibits spontaneous disintegration of unstable nuclei with the emission of nuclear particles or photons and includes any nonradioactive reagent kit or nuclide generator that is intended to be used in the preparation of the drug.

“Radiopharmaceutical agent” means a radionuclide or a radionuclide compound designed and prepared for administration to human beings.

“Therapeutic dosage” means a prescribed amount of a radionuclide or radiopharmaceutical, which is used for a therapeutic purpose.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-502. Use of Title

A person without a valid certificate shall not use the title of nuclear medicine technologist or the letters “NMT” after the person’s name to indicate or imply that the person is a certified nuclear medicine technologist or represent the person in any way as a certified nuclear medicine technologist. A person who holds a valid certificate issued by the Board may use the title nuclear medicine technologist.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-503. Display of Certificate

Each nuclear medicine technologist, including any part-time or temporary technologist provided through a temporary employment agency or service, shall display proof of certification by the Board.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-504. Application for Approval of a Nuclear Medicine Technology School

- A. An applicant that seeks approval for a nuclear medicine technology school shall apply by letter and shall address all of the requirements for school approval in R12-2-505.
- B. The Board shall review the application in a timely manner, as required in R12-2-301, and approve or deny the application.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-505. Standards for Nuclear Medicine Technology Schools; Approved Nuclear Medicine Technology Schools

- A. Based on the following factors, the Board may approve a school of nuclear medicine technology as maintaining a satisfactory standard if its course of study:
 1. Is for a period not less than 12 months of full-time study or the equivalent and is accredited by the Joint Review Committee on Education in Nuclear Medicine or meets or exceeds the standards of the Joint Review Committee on Education in Nuclear Medicine as determined by the Board.
 2. Includes not less than 1900 contact hours, including but not limited to: methods of patient care, radiation safety and protection, nuclear medicine, physics and radiation physics, nuclear instrumentation, statistics, radionuclide chemistry and radiopharmacy, departmental organization and function, radiation biology, nuclear medicine in-vivo and in-vitro procedures, radionuclide therapy, computer application, clinical education, and medical law and ethics.
- B. The Board shall maintain a list of approved nuclear medicine technology schools.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-506. Certification and Grandfather Provisions

- A. A person who has practiced nuclear medicine without a certificate from the Board before the effective date of these rules and who wishes to continue practicing shall apply for a temporary certificate as required in A.R.S. § 32-2814(C) and (D).
- B. A person who applies under subsection (A) shall pass the Board’s certification no later than December 31, 2004.
- C. Effective January 1, 2005, each applicant seeking certification by the Board as a nuclear medicine technologist shall provide proof of minimum education and training either by passing the Board’s certification examination or presenting a valid certificate issued on the basis of an examination by a certificate-granting body recognized by the Board.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

ARTICLE 6. PRACTICAL TECHNOLOGIST IN BONE DENSITOMETRY

Article 6, consisting of R12-2-601 through R12-2-605, made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-601. Definitions

“Practical technologist in bone densitometry” means a person authorized by the Board to perform a bone mineral densitometry limited to the extremities.

“Qualified instructor” means a person who is recognized by the Board, provides education or training in the application of ionizing radiation to extremities through the use of a bone densitometry machine, and has a relevant certification from the Board or a recognized certificate-granting body.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-602. Recognized Certificate-granting Bodies

The Board shall maintain a list of recognized certificate-granting bodies in the field of bone mineral densitometry.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-603. Limitation

The practical technologist in bone densitometry certificate authorizes the practical technologist in bone densitometry to perform densitometry only on an extremity as defined in R12-2-101.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-604. Education

An applicant for a certificate issued under this Article shall provide evidence of having completed a total of 80 hours of instruction from qualified instructors in the following subjects: radiation safety, conventions in densitometry, densitometry techniques, anatomy, precision and accuracy, quality control, osteoporosis overview, and understanding data.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).

R12-2-605. Qualified Instructors

The Board shall maintain a list of qualified instructors.

Historical Note

New Section made by final rulemaking at 10 A.A.R. 3972, effective November 13, 2004 (Supp. 04-3).