

**1999 HOUSE HUMAN SERVICES**

**HB 1311**



1999 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. HB 1311

House Human Services Committee

Conference Committee

Hearing Date January 18, 1999

| Tape Number   | Side A | Side B | Meter #     |
|---|--------|--------|-------------|
| 1   |        | X      | 36.4 - 60.0 |
| 2   | X      |        | 0.0 - 60.0  |
| 2   |        | X      | 0.0 - 19.7  |
| Committee Clerk Signature <i>Susann Lindsteigen</i> |        |        |             |

Minutes:

Rep. TODD PORTER introduced the bill. (Testimony attached)

Rep. BRUCE ECKRE asked could the cost of health care go up if people are required to have a license? Rep. TODD PORTER stated it may go down because it would reduce the number of procedures. The training would be 12 continuing education units (CEU). Rep. BRUCE ECKRE asked about learning by doing and Rep. TODD PORTER stated absolutely through clinical environment.

Rep. RALPH METCALF stated concerns about restricted license and how it is administered in rural areas that have one or two x-rays per day. Rep. TODD PORTER said the restricted license provision would allow a person to do restricted procedure based on what they have been taught. The individual must understand the physics behind the radiation they are administering to the patient. The physician can also take the x-ray. Rep. RALPH METCALF asked about lengthy

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education process and if people could move from restricted to complete licensing. Rep. TODD PORTER deferred the question.

Rep. PAT GALVIN asked what precipitated this bill and don't these people have licenses. Rep. TODD PORTER said no they don't. Rep. PAT GALVIN asked if this has caused any major problems? Rep. TODD PORTER deferred the question to others who will show where people have been harmed by excessive radiation.

BILL KRETSCHMAR, Lobbyist, ND Society for Radiologic Technology, testified this bill is a good step forward for ND health systems. It requires continuing education.

CHARLENE SCHROETER, Registered Radiology Technician, Registered Radiology Technician, certified in radiation therapy, Chairman of ND Society of Radiologic Technologists Board testified. (Testimony attached) Highlights of bill - Page 2, line 13, no. 13; Page 4, line 14, Sec 6; Page 5, Line 1, Sec 8. We are asking 12 CEU's be required to continue license. On the proposed amendments, Legislative Council said it needs clarity. Page 4, line 2 - research found board members get paid mileage. Page 4, line 6 to assure a stand-alone board and independence of state funding. Page 5, line 18, LC suggested to follow suit with other bills. Dr. DALE KLEIN, ND Academy of Family Physicians, letter of support was read (attached). Packet of information (attached) includes Fact Sheet to get continuing education in ND; profile of radiologic technology; list of 33 states that have full licensure or certification law and the 17 states that do not; information and education about the field; most important document is the ivory colored one; letter of support from the national organization.

LISA STOCKS-BRUSH, Registered Radiologic Technologist and Certified Nuclear Medicine Technologist, testified (Testimony attached).

LINDA OTTESON - Registered Radiological Technologist (Testimony attached) read.

DONNA NEWMAN, medical radiographer, ND State Society of Radiologic Technologists testified (Testimony attached).

MONICA CHAMLEY, Registered Technologist, testified (Testimony attached).

SHIRLEY KOBLE, ND Society of Radiologic Technologists, testified (Testimony attached).

Rep. BRUCE ECKRE asked on Page 2, line 18, population not exceed 2,000 - where did the number come from? CHARLENE SCHROETER said they looked at a map and found towns with registered technologists in the. There are only 22 ND towns with population over 2,000. There are 339 towns under 2,000.

Rep. RALPH METCALF asked how nuclear medicine technologists are involved and can they practice in ND without being certified by national board? CHARLENE SCHROETER stated yes. There is nothing in the state preventing some from practicing. Rep. RALPH METCALF asked is there a national board that certifies them? CHARLENE SCHROETER deferred the question. DONNA NEWMAN answered there are two ways to be a nuclear medicine technologist - be a radiographer first then go to school and go through the ARTA registry or go to college and through CMT. ND has no laws. Rep. RALPH METCALF asked if that means nuclear medicine technologists would have be registered under this program? DONNA NEWMAN stated this would insure that everybody is registered.

Rep. WANDA ROSE asked for an explanation if registered meant on a national registry.

CHARLENE SCHROETER stated there is a national exam of 250 questions after you attend radiography school.

Rep. CLARA SUE PRICE asked is there any form of licensure in ND? CHARLENE

SCHROETER stated as far as radiologic technologists - Board of Medical Examiners put a bill

together in the last session Rep. CLARA SUE PRICE brought attention to the conflict in Linda

Otteson's testimony about "non-licensed" and "licensed" in Fargo. CHARLENE SCHROETER

stated no, we don't. It must have been typo. It should have been "registered." Rep. CLARA

SUE PRICE asked what other fields are registered? CHARLENE SCHROETER stated there are

several different avenues - mammos, CT's MRI, cardiovascular, ultrasound, quality management,

radiation therapy, nuclear medicine. Rep. CLARA SUE PRICE asked in order to continue to be

registered, is there any CEU requirements in those areas? CHARLENE SCHROETER said yes,

nationally, there are 24 CEU's for 2-year registration. Rep. CLARA SUE PRICE asked how will

this board make sure that those who have MRI training are not in nuclear medicine and are there

provisions to protect those areas? CHARLENE SCHROETER stated that would have be

foreseen by the board.

Rep. WANDA ROSE asked is the national registration a voluntary process? CHARLENE

SCHROETER stated no, its a requirement. Rep. WANDA ROSE asked is it possible to have

individuals who were registered and for some reason didn't maintain registration but continued

to be employed and provide these services? CHARLENE SCHROETER stated yes, because we

have no licenses in ND. Rep. WANDA ROSE asked how this interfaces with Health Department

license requirements? CHARLENE SCHROETER said she couldn't speak for them.

Rep. RALPH METCALF asked about grandfather provisions and expressed concern about

person who performs two x-rays daily and is that considered to meet this area? CHARLENE

SCHROETER stated Yes that person could receive a license. Rep. RALPH METCALF asked if

it means that a person who wasn't fully trained initially could now be licensed. CHARLENE SCHROETER said yes. Rep. RALPH METCALF asked about 12 CEU is what is needed to be licensed. CHARLENE SCHROETER said yes.

Rep. CLARA SUE PRICE questioned answers to Rep. RALPH METCALF because he addressed those that didn't have the license. In order to get the restricted license, under numbers 4 and 5, they have to have a board approved course of study and also have to be on current registry. Currently the people who have not gone through an approved school are not registered - they have to have both to get the restricted license. Is that correct? CHARLENE SCHROETER stated the restricted license is for people after August 1, 1999. Rep. CLARA SUE PRICE asked about grandfathering in those who have not gone through an approved study? CHARLENE SCHROETER stated my understanding of the bill is for those people who don't have formal training would be grandfathered in as a registered radiologic technologist. After August 1, 1999, people who meet these requirements would be given one. Rep. CLARA SUE PRICE asked on lines 15 and 16, as of August 1, 1999, if they practiced for 5 months, that's it? CHARLENE SCHROETER said yes.

Rep. WANDA ROSE asked about the national registration that included ultrasound. Does it cover physical and occupational therapists? CHARLENE SCHROETER stated the bill has nothing on non-ionized radiation and ultrasound.

DANA MOUNT, Director of Environmental Engineering, Dept. of Health, testified (Testimony and amendments attached).

Rep. TODD PORTER asked on page 1, no. 3, section 4, page 4; how are non-trained people allowed to do x-rays in ND? DANA MOUNT stated there are general standards for training.

They don't cover all details. Rep. TODD PORTER asked does the Health Department want to be able to write new rules without the Board's agreement? DANA MOUNT said yes. Rep. TODD PORTER asked does the Health Dept. want to oversee all the rules this Board wants to have in place. DANA MOUNT stated only to the effect they have to meet a certain minimum level.

#### NEUTRAL TESTIMONY

MIKE TOMASKO Administrator, Mid-Dakota Clinic, representing 250 prime-care and sister Health Care Groups in Dickinson, Hazen-Beulah, Hettinger, and Williston, ND testified. He said the issue is one of quality of care and safety associated with radiologic care. Concerns are: (1) page 2, line 15-17, mentions dental inclusion - authority should be left to the Board: (2) utilization of population for issuing license - delete. This may be related to turf protection. and (3) confusion on page 4, sec 5, line 15 and page 2, line 25 on grandfathering and when the bill takes effect. License should be issued at whatever time is set for those x-ray technologists who are already legally practicing and not those who have been in practice for 6 months. New employees should be eligible for a restricted license.

ARNOLD THOMAS, ND Health Care Assn., testified (Testimony, definitions, and amendment attached).

Rep. WANDA ROSE asked to have the licensure survey described. ARNOLD THOMAS stated it is a state survey which is contingent on state appropriation, usually 5-8 years between surveys and 33 out of 44 facilities are joint commission accredited. Rep. WANDA ROSE asked where are the facilities located that are not jointly accredited? ARNOLD THOMAS stated they are mostly small communities under 5,000.

Rep. TODD PORTER asked don't they look at policies under joint accreditation and don't necessarily care about training? ARNOLD THOMAS stated flexibility is up to the institution relative to manpower training. Registered technologists are highly valued but there are alternative education programs. We suggest that with our amendment you don't pre-empt flexibility. Rep. TODD PORTER asked if we amend this bill, why have it at all? ARNOLD THOMAS stated we didn't bring the bill.

Rep. WANDA ROSE asked if we consider this amendment, who would be left to conduct x-rays? ARNOLD THOMAS stated our amendment would exempt those clinics and hospitals with direct ownership or managerial responsibility. There are a number of freestanding clinics of which our bill wouldn't affect.

Rep. CHET POLLERT asked how many cases do we have malpractice suits? ARNOLD THOMAS stated he didn't have the information but to his knowledge none on radiology.

ROLF SLETTEN, Director, State Board of Medical Examiners, testified they are not opposed to the bill but have a concern with the language. One, the bill doesn't contain a true scope of practice statements. The definition of the profession shouldn't be left up to the members of the board. The parameters should be set by the Legislature. Second, it doesn't contain any true supervision requirements.

CRAIG BOECKEL, ND Chiropractic Assn., testified they have no opposition to the bill. The safety concerns are hard to argue with. Two technical concerns: (1) grandfathering - Board "shall" issue... . What is intent when compared to legally practice and the definition of radiological technology? (2) Scope was a restriction to people who use ionized radiation.

Confusing between page 2 and 3, dark room language.

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DUVONNE CAMPBELL and CHRISTINE LUNG MORRISON, American Society of Radiologic Technologists, (letter attached).

WAYNE A. MATTERN, ND Board of Dental Examiners, (letter attached).

RENEE DAUCSSAAGE, NDDHA, (letter with amendments attached).



1999 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. HB 1311

House Human Services Committee

Conference Committee

Hearing Date February 2, 1999

| Tape Number                                       | Side A | Side B | Meter #    |
|---|--------|--------|------------|
| 2   | X      |        | 39.7 - End |
| 2   |        | X      | 0.0 - End  |
|   |        |        |            |
| Committee Clerk Signature <i>Susan Lindteigen</i> |        |        |            |

Minutes:

Rep. TODD PORTER stated the ND Health Care Association wrote a letter removing objection after hoghouse of the bill and discussed concerns of prime care, dentistry, continuing education, and limited licensure. Also, discussed radiotechnolgist and grandfathering in the restricted licensed person who had no experience prior to six months.

Committee Discussion.

Rep. TODD PORTER moved to ADOPT AMENDMENT No. 90507.0104

Rep. AMY KLINISKE second the motion.

Further Committee Discussion.

Rep. WANDA ROSE stated this amendment isn't workable. There are too many holes; they're not protecting the group they want. Rep. WILLIAM DEVLIN stated the intent is to get those people trained and educated.

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VOICE VOTE: 14 yeas, 0 nays, 0 absent

Further Committee Discussion.

Rep. CHET POLLERT moved DO NOT PASS AS AMENDED.

Rep. AMY KLINISKE second the motion.

Further Committee Discussion.

Rep. ROXANNE JENSEN stated I have no quarrel with what is happening now. So, I'm going to vote against the do not pass.

ROLL CALL VOTE #8: 10 yeas, 4 nays, 1 absent

FISCAL NOTE

(Return original and 10 copies)

Bill/Resolution No.: HB 1311 Amendment to: \_\_\_\_\_

Requested by Legislative Council Date of Request: \_\_\_\_\_

- 1. Please estimate the fiscal impact (in dollar amounts) of the above measure for state general or special funds, counties, cities, and school districts.

Narrative:

House Bill No. 1311 establishes a radiology technology board of examiners, license fees, and compensation for board members. Because the board does not exist, there is no agency or board in state government with information to complete a fiscal note on the bill.

- 2. State fiscal effect in dollar amounts:

Table with 7 columns: 1997-99 Biennium (General Fund, Special Funds), 1999-2001 Biennium (General Fund, Special Funds), 2001-03 Biennium (General Fund, Special Funds)

Revenues:

Expenditures:

- 3. What, if any, is the effect of this measure on the appropriation for your agency or department:

- a. For rest of 1997-99 biennium: \_\_\_\_\_
b. For the 1999-2001 biennium: \_\_\_\_\_
c. For the 2001-03 biennium: \_\_\_\_\_

- 4. County, City, and School District fiscal effect in dollar amounts:

Table with 9 columns: 1997-99 Biennium (Counties, Cities, School Districts), 1999-2001 Biennium (Counties, Cities, School Districts), 2001-03 Biennium (Counties, Cities, School Districts)

If additional space is needed, attach a supplemental sheet.

Signed [Signature]

Typed Name John Walstad, Code Revisor

Department Legislative Council

Phone Number 328-2916

Date Prepared: 1-15-99

## PROPOSED AMENDMENTS TO HOUSE BILL NO. 1311

Page 1, lines 6 through 8, replace, “an individual, other than a licensed practitioner, whose duties are restricted to radiography of the maxilla and mandible for a diagnostic purpose.” with “a qualified or registered dental assistant or licensed dental hygienists whose duties include radiography of the head and neck area for a diagnostic purpose.”

Page 2, line 16, remove “dental”.

Page 2, line 25, remove “or any”

Page 2, line 26, remove “other form of radiant energy”

Page 3, line 8, after “dental hygiene,” insert “dental assisting,”.

Page 3, line 12, after “licensed” insert “, registered, or classified as qualified dental assistant,”.

Page 3, line 13, replace, “examination” with, “service”

Page 3, line 15, after “radiologist” insert “or licensed dentist”

Page 4, line 6, after “procedures.” insert “These standards shall be no less stringent than, nor in conflict with ionizing radiation operator training requirements promulgated in accordance North Dakota Century Code Chapters 23-20 and 23-20.1.”

Page 5, line 10, replace “radiant energy” with “ionizing radiation”

Renumber accordingly

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1311

Page 1, line 2, after "examiners", insert "; and to provide a penalty"

Page 2, line 25, remove "or any"

Page 2, line 26, remove "other form of radiant energy"

Page 2, line 27, after the first comma, insert "licensed" and remove "or"

Page 2, line 28, after "radiographer", insert ", or restricted licenseholder"

Page 3, line 19, replace "a one-year term" with "three-year terms"

Page 3, line 20, replace "three-year terms" with "a one-year term"

Page 3, line 31, replace "is entitled to receive a" with "serves without" and replace "of sixty-two dollars and fifty cents per day, and" with "but is entitled to receive mileage and travel expenses"

Page 4, line 1, remove "reimbursement of necessary expenses" and remove "official"

Page 4, line 2, replace "by law for state officers" with "under section 54-06-09 at the same rate as state employees" and after the period, insert "Expenses incurred under this chapter may not be charged against the funds of the state. Funds administered by the board do not revert to the general fund of the state."

Page 4, after line 6, insert:

**"SECTION 5. Board - Officers.** The board shall elect a president and a secretary-treasurer. The secretary-treasurer may not be a member of the board but must be a radiographer. The secretary-treasurer may be paid an annual salary and must be bonded for the faithful discharge of the secretary-treasurer's duties in the sum of one thousand dollars."

Page 4, line 16, replace "radiologic technologist" with "radiographer"

Page 4, line 26, replace "7." with "8."

Page 5, line 10, replace "radiant energy" with "ionizing radiation"

Page 5, line 16, after "penalty", insert "- **Penalty**"

Page 5, line 17, remove "or a radiation therapist"

Page 5, line 18, replace "Any person who violates any provisions of this chapter, or any" with "Violation of any of the provisions of this chapter is a class B misdemeanor. In addition to the criminal penalties provided, the civil remedy of injunction is available to restrain and enjoin violations of any provisions of this chapter without proof of actual damages sustained by any person."

Page 5, remove line 19.

Renumber accordingly

Prepared for the Health and Human  
Services Committee by the NDHA.  
January 18,1999

Proposed Amendments to House Bill No. 1311

Page 3, after line 16, insert:

“ d. Employees of a hospital licensed under chapter 23-16 and employees of a facility for the diagnosis, treatment, or care of individuals, in which a hospital licensed under chapter 23-16 has an ownership interest or for which it has managerial responsibility.”

Renumber accordingly

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1311

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create a new subsection to section 43-12.1-08 of the North Dakota Century Code, relating to radiography practiced by a nurse; providing for the regulation and licensing of persons who administer radiologic procedures and establishing a radiology technology board of examiners; and to provide a penalty.

**BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

**SECTION 1.** A new subsection to section 43-12.1-08 of the 1997 Supplement to the North Dakota Century Code is created and enacted as follows:

Adopt standards for the limited practice of radiology by a registered nurse or by a licensed practical nurse which require at least twelve hours of board-approved continuing education specific to radiography annually and which require a written radiology examination.

**SECTION 2. Definitions.** As used in sections 2 through 12 of this Act:

1. "Board" means the radiology technology board of examiners.
2. "Ionizing radiation" means gamma rays, x-rays, alpha and beta particles, high-speed electrons, neutrons, protons, and other atomic or nuclear particles or rays. The term does not include sound or radio waves or visible, infrared, or ultraviolet light.
3. "License" means a certificate issued by the board authorizing the licensee to use equipment emitting ionizing radiation on a human for any diagnostic or therapeutic purpose specified under this chapter.
4. "Licensed practitioner" means an individual licensed in this state to practice medicine, dentistry, podiatry, chiropractic, optometry, or osteopathy or to practice as an advanced practice registered nurse or physician assistant.
5. "Nuclear medicine technologist" means an individual, other than a licensed practitioner, who uses radiopharmaceutical agents on a human for any diagnostic or therapeutic purpose.
6. "Public member" means a resident of the state, who is proficient in educational testing and measurements and who is not a licensed practitioner, radiologic technologist, registered or qualified dental assistant, or dental hygienist.
7. "Radiation therapist" means an individual, other than a licensed practitioner, who applies ionizing radiation to a human for any therapeutic purpose.
8. "Radiographer" means an individual who practices radiography.
9. "Radiography" means the application of ionizing radiation to a human for diagnostic or therapeutic purposes and, as related, includes the following:



- a. Performing procedures or examinations performed upon the order of or for diagnostic interpretation by a licensed practitioner;
  - b. Performing optional patient care applying established and accepted protocols;
  - c. Supervising any peer or student of radiography, or both; and
  - d. Continuing the evaluation of responsibilities and methods with the recommendations for expansion of the profession with the advances in modern medical technology.
10. "Radiologic physicist" means an individual certified, or eligible for certification, by the American board of radiology in radiological physics or a subspecialty of radiologic physics.
  11. "Radiologic technologist" means a radiographer, radiation therapist, or nuclear medicine technologist, who is registered by the American registry of radiologic technologists or board-approved equivalent or organization and is licensed under sections 2 through 12 of this Act to practice radiography on any body organ system.
  12. "Radiologist" means a licensed physician certified, or eligible for certification, by the American board of radiology, American osteopathic board of radiology, British royal college of radiology, or the Canadian college of physicians and surgeons.
  13. "Registered or qualified dental assistant" means an individual, other than a licensed practitioner, whose duties are restricted to radiography of the head and neck region for a diagnostic purpose.
  14. "Restricted license technician" means the holder of a restricted license issued by the board, which authorizes the holder to practice radiography under the indirect supervision of a radiologic technologist or radiologist.
  15. "Temporary license" means a certificate issued by the board authorizing the licensee to use equipment emitting ionizing radiation on a human for a diagnostic or therapeutic purpose. The licensee's license application or license renewal must be pending before the board and the issuance of the temporary license must be justified by special circumstances, as determined by the board.

### **SECTION 3. Licensure - Exceptions.**

1. Effective August 1, 2000, it is unlawful for a person to use ionizing radiation on a human for a diagnostic or therapeutic purpose unless that person is a licensed practitioner, licensed radiologic technologist, registered or qualified dental assistant, or restricted license technician.
2. An individual licensed under sections 2 through 12 of this Act may use a radioactive substance or equipment emitting ionizing radiation on a human only if the use is for a diagnostic or therapeutic purpose by prescription of a licensed practitioner, and only if the application of the substance or the use of the equipment is limited in a manner specified in sections 2 through 12 of this Act.
3. The provisions of sections 2 through 12 of this Act relating to radiography do not limit, enlarge, or affect the practice of a licensed practitioner, a registered or qualified dental assistant, or a dental hygienist.

4. The licensure requirement of this section does not apply to the following individuals:
  - a. A student enrolled in and attending a school or college of medicine, osteopathy, podiatry, dentistry, dental hygiene, dental assistant, chiropractic, optometry, or radiologic technology who as a student applies ionizing radiation to a human under the specific direction of an individual licensed to prescribe ionizing radiation.
  - b. An individual licensed, registered, or classified as qualified by the state board of dental examiners who is administering an x-ray service related to the practice of dentistry.
  - c. An individual licensed under chapter 43-12.1 as a registered nurse or a licensed practical nurse who meets the state board of nursing radiography education and examination requirements.

**SECTION 4. Board - Members - Term of office - Vacancies - Officers.** The board consists of eight members appointed by the governor for terms of three years except that of the initial members appointed, three shall serve three-year terms, two of whom must be radiologic technologists; three shall serve two-year terms; and two shall serve a one-year term. The terms of initial board members begin on August 1, 1999. Each board member must be a resident of the state, shall take the oath of office required of civil officers, and shall remain in office until a successor is appointed and qualified. In the case of a vacancy, the governor shall appoint a member to fill the position for the remainder of the unexpired term. Three board members must be radiologic technologists, one board member must be a licensed practitioner, one board member must be a radiological physicist, one board member must be a radiologist, one board member must be a chiropractor, and one board member must be a public member. The initial board members who are radiologic technologists are not required to be licensed, but each must have practiced as a radiologic technologist for at least three years.

**SECTION 5. Board - Compensation - Expenses - Meetings - Duties.** Each board member serves without compensation but is entitled to receive mileage and travel expenses incurred in the performance of board duties as provided under sections 44-08-04 and 54-06-09 at the same rate as state employees. Expenses incurred under this Act may not be charged against the funds of the state. Funds administered by the board do not revert to the general fund of the state. The board shall:

1. Meet at least once every six months.
2. Adopt rules for licensing, imposing discipline, handling appeals, and for otherwise implementing sections 2 through 12 of this Act.

**SECTION 6. Board - Officers.** The board shall elect a president and appoint a secretary-treasurer. The secretary-treasurer may not be a member of the board. The secretary-treasurer may be paid an annual salary and must be bonded for the faithful discharge of the secretary-treasurer's duties in the sum of one thousand dollars.

**SECTION 7. Restricted licenses.** The board shall issue a restricted license to an applicant who:

1. Pays a nonrefundable application fee;
2. Is at least eighteen years of age at the time of application;
3. Possesses a high school diploma or a general education equivalency certificate; and

4. Passes the restricted license exam.

**SECTION 8. Radiologic technologist license.** The board shall issue a radiologic technologist license to:

1. An applicant who as of August 1, 1999, has practiced as a radiographer for a period of at least six months.
2. An applicant who:
  - a. Pays a nonrefundable application fee;
  - b. Is at least eighteen years of age at the time of application;
  - c. Possesses a high school diploma or a general education equivalency certificate;
  - d. Satisfactorily completes a board-approved course of study in radiology, radiation therapy, nuclear medicine, or an equivalent as determined by the board; and
  - e. Possesses a current certificate by the American registry of radiologic technologists or by another recognized national voluntary credentialing body, issued on the basis of an examination satisfactory to the board.

**SECTION 9. Temporary licenses.** The board may issue a temporary license to any individual whose license application or license renewal is pending if issuance of the temporary license is justified by special circumstances. A temporary license may be issued only if issuing the temporary license will not endanger the public health and safety. A temporary license may not be issued for a period longer than one hundred eighty days.

**SECTION 10. License display - License renewal - Continuing education requirements.** Every holder of a license under sections 2 through 12 of this Act shall display the official license certificate or a verified copy in each place of employment. A restricted license and a radiologic technologist license must be renewed every two years. The board shall renew a restricted license or a radiologic technologist license upon receipt of payment of a renewal fee and of proof of successful completion of twenty-four board-approved continuing education units.

**SECTION 11. Discipline.** The board may suspend, refuse to renew, or revoke a license issued under this chapter or reprimand any licensee who is guilty of any of the following:

1. The practice of fraud or deceit in obtaining a license under sections 2 through 12 of this Act.
2. Any gross negligence, incompetence, or misconduct in the use of ionizing radiation.
3. Any offense determined by the board to have a direct bearing upon a licensee's ability to perform professional duties, or the board determines, following conviction of any offense, that a licensee is not sufficiently rehabilitated under section 12.1-33-02.1.
4. Violation of any code of ethics adopted by the board.

**SECTION 12. Prohibited acts - Penalties.** A person may not knowingly employ as a radiographer any person who does not meet the licensing requirements of

sections 2 through 12 of this Act. Violation of sections 2 through 12 of this Act is a class A misdemeanor. In addition to the criminal penalty, the civil remedy of injunction is available to restrain and enjoin any violation of sections 2 through 12 of this Act without proof of actual damages sustained by any person."

Renumber accordingly

VR  
2/3/99  
1 of 5

HOUSE AMENDMENTS TO HOUSE BILL NO. 1311 HUMSER 2-3-99

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to provide for the regulation and licensing of persons who administer radiologic procedures and establishing a radiology technology board of examiners; to create a new subsection to section 43-12.1-08 of the North Dakota Century Code, relating to radiography practiced by a nurse; and to provide a penalty.

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4. "Licensed practitioner" means an individual licensed in this state to practice medicine, dentistry, podiatry, chiropractic, optometry, or osteopathy or to practice as an advanced practice registered nurse or physician assistant.
5. "Nuclear medicine technologist" means an individual, other than a licensed practitioner, who uses radiopharmaceutical agents on a human for any diagnostic or therapeutic purpose.
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- b. Performing optional patient care applying established and accepted protocols;
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  - d. Continuing the evaluation of responsibilities and methods with the recommendations for expansion of the profession with the advances in modern medical technology.
10. "Radiologic physicist" means an individual certified, or eligible for certification, by the American board of radiology in radiological physics or a subspecialty of radiologic physics.
  11. "Radiologic technologist" means a radiographer, radiation therapist, or nuclear medicine technologist, who is registered by the American registry of radiologic technologists or board-approved equivalent or organization and is licensed under sections 2 through 12 of this Act to practice radiography on any body organ system.
  12. "Radiologist" means a licensed physician certified, or eligible for certification, by the American board of radiology, American osteopathic board of radiology, British royal college of radiology, or the Canadian college of physicians and surgeons.
  13. "Registered or qualified dental assistant" means an individual, other than a licensed practitioner, whose duties are restricted to radiography of the head and neck region for a diagnostic purpose.
  14. "Restricted license technician" means the holder of a restricted license issued by the board, which authorizes the holder to practice radiography under the indirect supervision of a radiologic technologist or radiologist.
  15. "Temporary license" means a certificate issued by the board authorizing the licensee to use equipment emitting ionizing radiation on a human for a diagnostic or therapeutic purpose. The licensee's license application or license renewal must be pending before the board and the issuance of the temporary license must be justified by special circumstances, as determined by the board.

**SECTION 3. Licensure - Exceptions.**

1. Effective August 1, 2000, it is unlawful for a person to use ionizing radiation on a human for a diagnostic or therapeutic purpose unless that person is a licensed practitioner, licensed radiologic technologist, registered or qualified dental assistant, or restricted license technician.
2. An individual licensed under sections 2 through 12 of this Act may use a radioactive substance or equipment emitting ionizing radiation on a human only if the use is for a diagnostic or therapeutic purpose by prescription of a licensed practitioner, and only if the application of the substance or the use of the equipment is limited in a manner specified in sections 2 through 12 of this Act.
3. The provisions of sections 2 through 12 of this Act relating to radiography do not limit, enlarge, or affect the practice of a licensed practitioner, a registered or qualified dental assistant, or a dental hygienist.
4. The licensure requirement of this section does not apply to the following individuals:

- a. A student enrolled in and attending a school or college of medicine, osteopathy, podiatry, dentistry, dental hygiene, dental assistant, chiropractic, optometry, or radiologic technology who as a student applies ionizing radiation to a human under the specific direction of an individual licensed to prescribe ionizing radiation.
- b. An individual licensed, registered, or classified as qualified by the state board of dental examiners who is administering an x-ray service related to the practice of dentistry.
- c. An individual licensed under chapter 43-12.1 as a registered nurse or a licensed practical nurse who meets the state board of nursing radiography education and examination requirements.

**SECTION 4. Board - Members - Term of office - Vacancies - Officers.** The board consists of eight members appointed by the governor for terms of three years except that of the initial members appointed, three shall serve three-year terms, two of whom must be radiologic technologists; three shall serve two-year terms; and two shall serve a one-year term. The terms of initial board members begin on August 1, 1999. Each board member must be a resident of the state, shall take the oath of office required of civil officers, and shall remain in office until a successor is appointed and qualified. In the case of a vacancy, the governor shall appoint a member to fill the position for the remainder of the unexpired term. Three board members must be radiologic technologists, one board member must be a licensed practitioner, one board member must be a radiological physicist, one board member must be a radiologist, one board member must be a chiropractor, and one board member must be a public member. The initial board members who are radiologic technologists are not required to be licensed, but each must have practiced as a radiologic technologist for at least three years.

**SECTION 5. Board - Compensation - Expenses - Meetings - Duties.** Each board member serves without compensation but is entitled to receive mileage and travel expenses incurred in the performance of board duties as provided under sections 44-08-04 and 54-06-09 at the same rate as state employees. Expenses incurred under this Act may not be charged against the funds of the state. Funds administered by the board do not revert to the general fund of the state. The board shall:

- 1. Meet at least once every six months.
- 2. Adopt rules for licensing, imposing discipline, handling appeals, and for otherwise implementing sections 2 through 12 of this Act.

**SECTION 6. Board - Officers.** The board shall elect a president and appoint a secretary-treasurer. The secretary-treasurer may not be a member of the board. The secretary-treasurer may be paid an annual salary and must be bonded for the faithful discharge of the secretary-treasurer's duties in the sum of one thousand dollars.

**SECTION 7. Restricted licenses.** The board shall issue a restricted license to an applicant who:

- 1. Pays a nonrefundable application fee;
- 2. Is at least eighteen years of age at the time of application;
- 3. Possesses a high school diploma or a general education equivalency certificate; and
- 4. Passes the restricted license exam.



**SECTION 8. Radiologic technologist license.** The board shall issue a radiologic technologist license to:

1. An applicant who as of August 1, 1999, has practiced as a radiographer for a period of at least six months.
2. An applicant who:
  - a. Pays a nonrefundable application fee;
  - b. Is at least eighteen years of age at the time of application;
  - c. Possesses a high school diploma or a general education equivalency certificate;
  - d. Satisfactorily completes a board-approved course of study in radiology, radiation therapy, nuclear medicine, or an equivalent as determined by the board; and
  - e. Possesses a current certificate by the American registry of radiologic technologists or by another recognized national voluntary credentialing body, issued on the basis of an examination satisfactory to the board.

**SECTION 9. Temporary licenses.** The board may issue a temporary license to any individual whose license application or license renewal is pending if issuance of the temporary license is justified by special circumstances. A temporary license may be issued only if issuing the temporary license will not endanger the public health and safety. A temporary license may not be issued for a period longer than one hundred eighty days.

**SECTION 10. License display - License renewal - Continuing education requirements.** Every holder of a license under sections 2 through 12 of this Act shall display the official license certificate or a verified copy in each place of employment. A restricted license and a radiologic technologist license must be renewed every two years. The board shall renew a restricted license or a radiologic technologist license upon receipt of payment of a renewal fee and of proof of successful completion of twenty-four board-approved continuing education units.

**SECTION 11. Discipline.** The board may suspend, refuse to renew, or revoke a license issued under this chapter or reprimand any licensee who is guilty of any of the following:

1. The practice of fraud or deceit in obtaining a license under sections 2 through 12 of this Act.
2. Any gross negligence, incompetence, or misconduct in the use of ionizing radiation.
3. Any offense determined by the board to have a direct bearing upon a licensee's ability to perform professional duties, or the board determines, following conviction of any offense, that a licensee is not sufficiently rehabilitated under section 12.1-33-02.1.
4. Violation of any code of ethics adopted by the board.

**SECTION 12. Prohibited acts - Penalties.** A person may not knowingly employ as a radiographer any person who does not meet the licensing requirements of sections 2 through 12 of this Act. Violation of sections 2 through 12 of this Act is a class A misdemeanor. In addition to the criminal penalty, the civil remedy of injunction



is available to restrain and enjoin any violation of sections 2 through 12 of this Act without proof of actual damages sustained by any person."

Renumber accordingly

Date: 2-9-99  
 Roll Call Vote #: 8

1999 HOUSE STANDING COMMITTEE ROLL CALL VOTES  
 BILL/RESOLUTION NO. 1311

House Human Services Committee

Subcommittee on \_\_\_\_\_  
 or  
 Conference Committee

Legislative Council Amendment Number 90507.0104

Action Taken Do Not Pass as Amended

Motion Made By Chet Pollert Seconded By Amy Kliniske

| Representatives              | Yes | No | Representatives   | Yes | No |
|------------------------------|-----|----|-------------------|-----|----|
| Clara Sue Price - Chairwoman | X   |    | Bruce A. Eckre    |     | X  |
| Robin Weisz - Vice Chairman  | X   |    | Ralph Metcalf     | X   |    |
| William R. Devlin            | X   |    | Carol A. Niemeier | X   | X  |
| Pat Galvin                   |     |    | Wanda Rose        | X   |    |
| Dale L. Henegar              | X   |    | Sally M. Sandvig  | X   |    |
| Roxanne Jensen               |     | X  |                   |     |    |
| Amy N. Kliniske              | X   |    |                   |     |    |
| Chet Pollert                 | X   |    |                   |     |    |
| Todd Porter                  |     | X  |                   |     |    |
| Blair Thoreson               | X   |    |                   |     |    |
|                              |     |    |                   |     |    |
|                              |     |    |                   |     |    |
|                              |     |    |                   |     |    |
|                              |     |    |                   |     |    |

Total Yes 10 No 4  
 Absent 1

Floor Assignment Wanda Rose

If the vote is on an amendment, briefly indicate intent:

**REPORT OF STANDING COMMITTEE**

**HB 1311: Human Services Committee (Rep. Price, Chairman)** recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO NOT PASS** (10 YEAS, 4 NAYS, 1 ABSENT AND NOT VOTING). HB 1311 was placed on the Sixth order on the calendar.

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to provide for the regulation and licensing of persons who administer radiologic procedures and establishing a radiology technology board of examiners; to create a new subsection to section 43-12.1-08 of the North Dakota Century Code, relating to radiography practiced by a nurse; and to provide a penalty.

**BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

**SECTION 1.** A new subsection to section 43-12.1-08 of the 1997 Supplement to the North Dakota Century Code is created and enacted as follows:

Adopt standards for the limited practice of radiology by a registered nurse or by a licensed practical nurse which require at least twelve hours of board-approved continuing education specific to radiography annually and which require a written radiology examination.

**SECTION 2. Definitions.** As used in sections 2 through 12 of this Act:

1. "Board" means the radiology technology board of examiners.
2. "Ionizing radiation" means gamma rays, x-rays, alpha and beta particles, high-speed electrons, neutrons, protons, and other atomic or nuclear particles or rays. The term does not include sound or radio waves or visible, infrared, or ultraviolet light.
3. "License" means a certificate issued by the board authorizing the licensee to use equipment emitting ionizing radiation on a human for any diagnostic or therapeutic purpose specified under this chapter.
4. "Licensed practitioner" means an individual licensed in this state to practice medicine, dentistry, podiatry, chiropractic, optometry, or osteopathy or to practice as an advanced practice registered nurse or physician assistant.
5. "Nuclear medicine technologist" means an individual, other than a licensed practitioner, who uses radiopharmaceutical agents on a human for any diagnostic or therapeutic purpose.
6. "Public member" means a resident of the state, who is proficient in educational testing and measurements and who is not a licensed practitioner, radiologic technologist, registered or qualified dental assistant, or dental hygienist.
7. "Radiation therapist" means an individual, other than a licensed practitioner, who applies ionizing radiation to a human for any therapeutic purpose.
8. "Radiographer" means an individual who practices radiography.
9. "Radiography" means the application of ionizing radiation to a human for diagnostic or therapeutic purposes and, as related, includes the following:

- a. Performing procedures or examinations performed upon the order of or for diagnostic interpretation by a licensed practitioner;
  - b. Performing optional patient care applying established and accepted protocols;
  - c. Supervising any peer or student of radiography, or both; and
  - d. Continuing the evaluation of responsibilities and methods with the recommendations for expansion of the profession with the advances in modern medical technology.
10. "Radiologic physicist" means an individual certified, or eligible for certification, by the American board of radiology in radiological physics or a subspecialty of radiologic physics.
  11. "Radiologic technologist" means a radiographer, radiation therapist, or nuclear medicine technologist, who is registered by the American registry of radiologic technologists or board-approved equivalent or organization and is licensed under sections 2 through 12 of this Act to practice radiography on any body organ system.
  12. "Radiologist" means a licensed physician certified, or eligible for certification, by the American board of radiology, American osteopathic board of radiology, British royal college of radiology, or the Canadian college of physicians and surgeons.
  13. "Registered or qualified dental assistant" means an individual, other than a licensed practitioner, whose duties are restricted to radiography of the head and neck region for a diagnostic purpose.
  14. "Restricted license technician" means the holder of a restricted license issued by the board, which authorizes the holder to practice radiography under the indirect supervision of a radiologic technologist or radiologist.
  15. "Temporary license" means a certificate issued by the board authorizing the licensee to use equipment emitting ionizing radiation on a human for a diagnostic or therapeutic purpose. The licensee's license application or license renewal must be pending before the board and the issuance of the temporary license must be justified by special circumstances, as determined by the board.

### **SECTION 3. Licensure - Exceptions.**

1. Effective August 1, 2000, it is unlawful for a person to use ionizing radiation on a human for a diagnostic or therapeutic purpose unless that person is a licensed practitioner, licensed radiologic technologist, registered or qualified dental assistant, or restricted license technician.
2. An individual licensed under sections 2 through 12 of this Act may use a radioactive substance or equipment emitting ionizing radiation on a human only if the use is for a diagnostic or therapeutic purpose by prescription of a licensed practitioner, and only if the application of the substance or the use of the equipment is limited in a manner specified in sections 2 through 12 of this Act.

3. The provisions of sections 2 through 12 of this Act relating to radiography do not limit, enlarge, or affect the practice of a licensed practitioner, a registered or qualified dental assistant, or a dental hygienist.
4. The licensure requirement of this section does not apply to the following individuals:
  - a. A student enrolled in and attending a school or college of medicine, osteopathy, podiatry, dentistry, dental hygiene, dental assistant, chiropractic, optometry, or radiologic technology who as a student applies ionizing radiation to a human under the specific direction of an individual licensed to prescribe ionizing radiation.
  - b. An individual licensed, registered, or classified as qualified by the state board of dental examiners who is administering an x-ray service related to the practice of dentistry.
  - c. An individual licensed under chapter 43-12.1 as a registered nurse or a licensed practical nurse who meets the state board of nursing radiography education and examination requirements.

**SECTION 4. Board - Members - Term of office - Vacancies - Officers.** The board consists of eight members appointed by the governor for terms of three years except that of the initial members appointed, three shall serve three-year terms, two of whom must be radiologic technologists; three shall serve two-year terms; and two shall serve a one-year term. The terms of initial board members begin on August 1, 1999. Each board member must be a resident of the state, shall take the oath of office required of civil officers, and shall remain in office until a successor is appointed and qualified. In the case of a vacancy, the governor shall appoint a member to fill the position for the remainder of the unexpired term. Three board members must be radiologic technologists, one board member must be a licensed practitioner, one board member must be a radiological physicist, one board member must be a radiologist, one board member must be a chiropractor, and one board member must be a public member. The initial board members who are radiologic technologists are not required to be licensed, but each must have practiced as a radiologic technologist for at least three years.

**SECTION 5. Board - Compensation - Expenses - Meetings - Duties.** Each board member serves without compensation but is entitled to receive mileage and travel expenses incurred in the performance of board duties as provided under sections 44-08-04 and 54-06-09 at the same rate as state employees. Expenses incurred under this Act may not be charged against the funds of the state. Funds administered by the board do not revert to the general fund of the state. The board shall:

1. Meet at least once every six months.
2. Adopt rules for licensing, imposing discipline, handling appeals, and for otherwise implementing sections 2 through 12 of this Act.

**SECTION 6. Board - Officers.** The board shall elect a president and appoint a secretary-treasurer. The secretary-treasurer may not be a member of the board. The secretary-treasurer may be paid an annual salary and must be bonded for the faithful discharge of the secretary-treasurer's duties in the sum of one thousand dollars.

**SECTION 7. Restricted licenses.** The board shall issue a restricted license to an applicant who:

1. Pays a nonrefundable application fee;
2. Is at least eighteen years of age at the time of application;
3. Possesses a high school diploma or a general education equivalency certificate; and
4. Passes the restricted license exam.

**SECTION 8. Radiologic technologist license.** The board shall issue a radiologic technologist license to:

1. An applicant who as of August 1, 1999, has practiced as a radiographer for a period of at least six months.
2. An applicant who:
  - a. Pays a nonrefundable application fee;
  - b. Is at least eighteen years of age at the time of application;
  - c. Possesses a high school diploma or a general education equivalency certificate;
  - d. Satisfactorily completes a board-approved course of study in radiology, radiation therapy, nuclear medicine, or an equivalent as determined by the board; and
  - e. Possesses a current certificate by the American registry of radiologic technologists or by another recognized national voluntary credentialing body, issued on the basis of an examination satisfactory to the board.

**SECTION 9. Temporary licenses.** The board may issue a temporary license to any individual whose license application or license renewal is pending if issuance of the temporary license is justified by special circumstances. A temporary license may be issued only if issuing the temporary license will not endanger the public health and safety. A temporary license may not be issued for a period longer than one hundred eighty days.

**SECTION 10. License display - License renewal - Continuing education requirements.** Every holder of a license under sections 2 through 12 of this Act shall display the official license certificate or a verified copy in each place of employment. A restricted license and a radiologic technologist license must be renewed every two years. The board shall renew a restricted license or a radiologic technologist license upon receipt of payment of a renewal fee and of proof of successful completion of twenty-four board-approved continuing education units.

**SECTION 11. Discipline.** The board may suspend, refuse to renew, or revoke a license issued under this chapter or reprimand any licensee who is guilty of any of the following:

1. The practice of fraud or deceit in obtaining a license under sections 2 through 12 of this Act.
2. Any gross negligence, incompetence, or misconduct in the use of ionizing radiation.

3. Any offense determined by the board to have a direct bearing upon a licensee's ability to perform professional duties, or the board determines, following conviction of any offense, that a licensee is not sufficiently rehabilitated under section 12.1-33-02.1.
4. Violation of any code of ethics adopted by the board.

**SECTION 12. Prohibited acts - Penalties.** A person may not knowingly employ as a radiographer any person who does not meet the licensing requirements of sections 2 through 12 of this Act. Violation of sections 2 through 12 of this Act is a class A misdemeanor. In addition to the criminal penalty, the civil remedy of injunction is available to restrain and enjoin any violation of sections 2 through 12 of this Act without proof of actual damages sustained by any person."

Renumber accordingly

**1999 TESTIMONY**

**HB 1311**



HOUSE OF REPRESENTATIVES HUMAN SERVICES COMMITTEE  
REPRESENTATIVE CLARA SUE PRICE, CHAIRMAN  
JANUARY 18, 1999

TESTIMONY BY  
REPRESENTATIVE TODD PORTER

IN SUPPORT OF HB1311

Chairman Price and members of the Human Services Committee my name is Todd Porter, Representative from District 34 in Mandan. I stand before you in favor of HB1311.

HB 1311 if enacted would create a board to oversee the educational requirements and licensing of Radiological Technologist in the State of North Dakota.

Currently there are over 630 Registered Technologists in North Dakota plus a large number of non-registered hospital and clinic employees that perform x-rays on unknowing patients without explaining their level of training or the risks that they are exposed to by having the procedure.

I understand the sentiments in regards to creating another new board in North Dakota. I think that eventually we need to look at the creating of a State Board of Medicine that combines the current medical boards including the physicians, nurses, respiratory therapist, occupational therapists, social workers and x-ray techs into the North Dakota Board of Medicine, but in the mean time we need to offer the protection of education requirements and licensure in this specialized field. We cannot expect our barbers, hair stylists, plumbers and electricians to operate at a professional level with standards enforced by the state and have procedures such as skull x-rays in children be performed by individuals without training.

I believe that this professional organization will explain to you today how they differ from other boards in this state. Their primary concern is to limit the rural impact that these requirements would impose in North Dakota. They are concerned that the individuals that are currently performing these procedures can continue in their job and start to receive continuing education through their profession society, they are concerned that new individuals will be needed in rural North Dakota and have made arrangements to have available a restricted license to offer rural North Dakota the ability to continue to offer safe and effective x-ray procedures. And finally, they are interested in offering these services to North Dakota at no expense to the state general fund and to offer these services through license fees under \$25.00 per member per year.

I would be more than happy to answer any questions at this time.

Thank you

Madam chairman and members of the committee my name is Charlene Schroeter and my background is a medical radiographer with specialty in the field of Radiation Therapy. I represent the North Dakota State Society of radiologic Technologists. With me today are several representatives from our professional organization. We welcome the opportunity to appear before you today during these hearings on HB Bill 1311.

We would like to address by far one of the most compelling reasons for adoption of HB 1311. Approximately 1.2 million people in the United States are expected to be diagnosed with invasive cancer in 1998. Nearly 565,000 Americans will die of the disease, more than 1,500 a day. Cancers caught at the earliest stages of development are less likely to spread to other parts of the body, improving chances of them being completely cured. Radiologic examinations often identify abnormalities very early in the progression of a disease, long before they become apparent with other types of diagnostic test.

With early detection and aggressive treatment, 78% of patients with Hodgkin disease, 90% of women with localized cervical cancer, 92% of men with localized prostate tumors and 93% of women with localized cervical cancer, 92% of men with localized prostate tumors and 93% of women with localized breast cancer can today cured. Technological advancement in medical imaging and radiation therapy during the past 25 years have dramatically improved chances of survival for the majority of cancer patients. Accurately diagnosing and treatment requires a high level of precision, reliability and consistency.

The medical team responsible for detecting and diagnosing any types of cancer include the patients primary care physician, a radiologist, is the physicians specialist who duties

and interprets the medical images, which are ordered by the primary care physician and finally the radiologic technologists who creates the images the radiologist reads. The radiologist carefully examines each image for signs of disease making a diagnosis possible. Accurate diagnosis is possible only when accurate imaging information is provided.

As you may know there still remains 17 states that do not license radiologic technologist personnel may receive as little as 10 hours of training before being allowed to perform radiologic procedure. The radiology professional forms on the largest form on the largest groups of health care providers in the US practicing today are more then 210,000 individuals who have education programs in radiologic sciences and earned national certificate in the profession. Because there is no federal laws regulating the performance of radiologic procedures ten of thousands of other individuals with limited training, and without credentials are permitted to perform radiologic procedures ten of thousands of other individuals with limited training and no credentials are permitted to perform radiologic produces on patients.

This situation is potentially dangerous for patients, because a radiologic procedure is only as effective as the person performing it. A underexpose chest x-ray cannot reveal a lung tumor, just as an inaccurately delivered dose of radiation cannot destroy malignant tumor cells.

Cancer patients shouldn't have to wonder whether the person taking their x-rays or setting up their radiation therapy treatment is competent. The success of a cancer management program depends not only on technology and equipment but also, on the

skill of the personnel responsible for understanding the technology and operating the equipment.

To be clinically useful, imaging exams must be accurate. To stop invasive cancer, radiation therapy treatments must be precise. Diagnostic medical imaging is used during virtually every stage of a cancer management program. Here are some specific ways medical imaging is used to detect and diagnose many types of cancers, it's used to stage cancer, to image tissue specimens, to formulate surgical strategies to plan radiation therapy, evaluate postsurgical sites and follow up the care of cancer patients.

We have to remember that this diagnosis begins in our small town by the family practice doctors, which is then followed to our larger institutions. You know a chest x-ray is the gold standard for diagnosis lung cancer, which is the most common x-ray done in the rural setting. Weeks makes all the difference in the world when we are talking about cancer. I would bet that no one in this room would dispute the fact that they would want their family to have the best care possible

In conclusion we must remember radiology plays an invaluable role in cancer detection and management programs. The establishment of educational standards is the first step to ensuring that medical imaging examination and radiation therapy procedures are safe, accurate and effective thus assuring cancer patients of the best care possible.



medcenter one



January 15, 1999

Human Services Committee  
House of Representatives  
State Capitol - Judicial Wing

Dear Committee Members,

I am writing in regards in support of our licensure of radiology technologists. The standards of medical care is important to assure quality. I believe the Bill 1311 that has been proposed would help with that standardization. It is also sensitive to the needs of smaller communities, allowing a grandfather clause and other special considerations if radiology technologists are not available. I would appreciate your support of this bill.

Sincerely yours.

*Dale Klein, M.D. SAK*  
DALE KLEIN, M.D.

President North Dakota Academy of Family Physicians

*Medcenter One, Inc.  
300 North Seventh Street  
Bismarck, North Dakota 58501  
Telephone 701/323-6000*



**NORTH  
DAKOTA**

# **SOCIETY OF RADIOLOGIC TECHNOLOGISTS**

January 15, 1999

Representative [REDACTED]  
[REDACTED]

Dear Representative [REDACTED]

We represent the North Dakota Society of Radiologic Technologists and invite you to take a few moments to look through this information that has been compiled for you.

Inside this packet you will find information about the profession of radiology, our educational background, professional organizations, and continuing education requirements. You will also find our recommendations for education and testing mechanisms of operators of x-ray equipment who have not completed formal education in the radiological sciences.

Our sole purpose in presenting bill # 1311 for adoption is to ensure quality patient care for all patients throughout the state of North Dakota. We feel strongly that by mandating standards for all operators of x-ray machinery, we can advance to the quality patient care that we want our families to have access to and all North Dakotans deserve.

We realize that we do have some opposition within the state. We also know that after you have looked at what can be gained by adoption of this bill, you will support quality patient care through standards of care in the operation of x-ray equipment. You will also see that we are not trying to take a job away from anyone or the services out of our smaller communities. Rather we want to improve the care that is being offered in all areas of our state.

We appreciate your time in looking through the information that we have compiled. We invite you to forward any questions that you may have to the contact listed below.

Sincerely,

Donna Newman, RT(R),CNMT  
341 Prairiewood Circle  
Fargo,ND 58103  
H)701-232-2614  
W)701-234-5664  
F)701-271-0170

Charlene Schroeter, RT(R)(T)  
311 North 5th ST  
Brainerd, MN 56401  
H)218-829-4270  
W)218-828-7585  
F)218-828-7588

# The Role of Medical Imaging And Radiation Therapy Personnel In a Modern Cancer Management Program

## I. INTRODUCTION

In the early 1900s, few cancer patients had any hope of long-term survival. Diagnosis of the disease was difficult, and treatment options were limited both in type and effectiveness. But today, many types of cancers are being cured and more people are surviving the disease than ever before. With early detection and aggressive treatment, 78 percent of patients with Hodgkin's disease can be cured, 90 percent of women with localized cervical cancer can be cured, 92 percent of men with localized prostate tumors can be cured, and 93 percent of women with localized breast cancer can be cured.<sup>1</sup> These remarkable improvements are due largely to better diagnostic capabilities and increasingly effective treatment options. In particular, technological advances in medical imaging and radiation therapy during the past 25 years have dramatically improved the chances of survival for a majority of cancer patients.

But effective cancer treatment depends on human relationships, not just technological developments. Accurately diagnosing and treating cancer requires a high level of human caring and compassion. It also demands a precision, reliability, consistency and level of teamwork that few other professions can match.



## *The Cancer Care Team*

The medical team responsible for detecting and diagnosing many types of cancers includes the patient's primary care physician, a radiologist and a radiologic technologist. Radiologists are physician specialists who study and interpret medical images ordered by the primary care physician and created by the radiologic technologist. The radiologist carefully examines each image for signs of disease, making a diagnosis possible. For the images to be interpreted correctly by the radiologist, the imaging examination must be performed correctly by the radiologic technologist. Accurate diagnosis is possible only when accurate imaging information is provided.

The effective treatment of cancer depends equally heavily on the team approach. Nearly 60% of U.S. cancer patients undergo some form of radiation therapy during the course of their treatment. Members of the team who provide this life-saving therapy include the radiation oncologist, the radiation therapist and the radiation physicist or medical dosimetrist. The oncologist, a physician specialist, consults with each patient to determine the best course of therapy and plan a treatment schedule, while the physicist or dosimetrist calculates how much radiation will be delivered in accordance with the oncologist's plan. Working directly with the patient is the radiation therapist, the medical professional who actually carries out the treatment plan by delivering targeted doses of radiation to the tumor site. Radiation therapists typically see each of their patients three to five days a week throughout a four- to seven-week treatment plan. As the patient's primary caregiver during this treatment period, radiation therapists often develop special relationships with their patients. Because they understand their patients' needs, radiation therapists learn to treat the whole patient, not just a tumor site.

Radiologic technologists and radiation therapists are invaluable members of the cancer care team, assisting physicians in the reliable detection and treatment of cancer. These radiology professionals form one of the largest groups of health care providers in the United States. Practicing today are more than 210,000 individuals who have completed educational programs in the radiologic sciences and earned national certification in the profession, ensuring their ability to provide safe, high-quality radiologic care. But because there is no federal law regulating the performance of radiologic procedures, tens of thousands of other individuals with limited training and no credentials are permitted to perform radiologic procedures on patients as well.

This situation is potentially dangerous for patients, because a radiologic procedure is only as effective as the person performing it. An underexposed chest x-ray cannot reveal a lung tumor, just as an inaccurately delivered dose of radiation cannot destroy malignant tumor cells. No matter what the radiologic procedure, the technologist's or therapist's detailed knowledge of anatomy, careful application of radiation and skillful operation of sophisticated medical equipment are the keys to its success.

### *The Need to Establish Quality Standards for Radiologic Personnel*

Cancer patients should not have to wonder whether the person taking their x-ray or setting up their radiation therapy treatment is competent. The success of a cancer management program depends not only on technology and equipment, but on the skills of the personnel responsible for understanding the technology and operating the equipment. To be clinically useful, imaging exams must be accurate. To stop invasive cancers, radiation therapy treatments must be precise.

The safety and quality of medical imaging exams and radiation therapy procedures can be improved through federal enforcement of the Consumer-Patient Radiation Health and Safety Act of 1981. Seventeen years ago, this Act established minimum educational and certification standards for personnel who provide radiologic services. But because adoption of the standards was made discretionary, only 33 states have enacted licensure laws for radiologic personnel, and many of those laws do not match the standards recommended by the federal government. In the 17 states that do not license radiologic technologists, personnel may receive as little as 10 hours of training before being allowed to perform radiologic procedures.

The American Society of Radiologic Technologists, representing more than 74,000 radiologic technologists nationwide, proposes that legislation be introduced in Congress to strengthen the Consumer-Patient Radiation Health and Safety Act. Enforcement of the Act would protect American patients by ensuring that radiologic procedures are performed by personnel who are qualified by education, experience and certification. The ASRT is not alone in the effort to strengthen the Consumer-Patient Radiation Health and Safety Act; the proposed legislation has received support from groups as diverse as the Cancer Research Foundation of America and Help Disabled War Veterans. In September 1998, the ASRT and the Society of Nuclear Medicine-Technologist Section founded the Alliance for Quality Medical Imaging and Radiation Therapy, a coalition of health care organizations dedicated to the provision of safe, high-quality radiologic care. Members of the alliance believe the personnel who perform medical imaging examinations and deliver radiation therapy treatments should be required to demonstrate competency in their area of practice. The alliance's primary goal is to establish national standards for the certification and education of all radiologic personnel.

Alliance members seek support from cancer research organizations, patient advocacy groups and other health care associations as they pursue their legislative proposal in Congress. Supporting this effort will give these organizations an opportunity to demonstrate their commitment to quality in the diagnosis and treatment of cancer.

Radiology plays an invaluable role in cancer detection and management programs. The establishment of federal minimum standards for radiologic personnel is a way to ensure that medical imaging exams and radiation therapy procedures are safe, accurate and effective, thus assuring cancer patients of the best radiologic care possible.

## II. MEDICAL IMAGING'S ROLE IN CANCER MANAGEMENT

Diagnostic medical imaging is an indispensable tool of modern medicine. It involves the precise administration of ionizing radiation, high-frequency sound waves, radioactive materials or powerful magnets with radiofrequency pulses to the human body to create an anatomical image of its tissues, organs, bones or vessels. Diagnostic medical imaging is used during virtually every stage of a modern cancer management program:

- Medical images are used to detect and diagnose many types of cancers, allowing physicians to identify neoplasms even in asymptomatic patients.
- Medical images are used to stage cancers, giving clinicians a way to evaluate prognosis and assess treatment options.
- Medical images are used to image tissue specimens following surgical biopsies, providing additional information about cellular changes.
- Medical images are used to formulate surgical strategies and plan radiation therapy treatments, providing physicians with precise anatomical margins to use as guides.
- Medical images are used to evaluate postsurgical or post-treatment sites, allowing clinicians to assess the therapeutic outcome of a chosen course of action.
- Medical images are used to follow up the care of cancer patients, helping ensure that any metastases, unrelated neoplasms or side effects from treatment are caught early.

In each of these ways, medical imaging technology provides health care providers with detailed information about a tumor's type, location, size and shape, as well as its spread or recurrence. Because this type of information often is difficult or impossible to obtain any other way, virtually every cancer patient undergoes some type of medical imaging examination during

the various stages of detecting, diagnosing, managing and treating their disease. Since the majority of cancer patients are first introduced to radiologic procedures during the detection phase of their medical care, and because cancers found early have a better chance of being effectively treated, this paper focuses on radiology's role during the detection and diagnosis stage. Throughout, it stresses the importance of ensuring the competency of personnel who perform medical imaging examinations.

### *Detection and Diagnosis*

Blood tests, cytological studies and physical examinations are diagnostic tools frequently used to detect certain types of cancers in asymptomatic patients. For many forms of cancer, however, the most effective early detection protocol is an imaging procedure such as an x-ray, a computed tomography scan, a magnetic resonance exam or a nuclear medicine procedure.

Approximately 1.2 million people in the United States are expected to be diagnosed with invasive cancer in 1998, and nearly 565,000 Americans will die of the disease — more than 1,500 people a day.<sup>2</sup> While cancer mortality rates are still too high, they are beginning to level off a bit, thanks in large part to better detection techniques that permit earlier diagnosis. Cancers caught at their earliest stages of development are less likely to have spread to other parts of the body, improving the chances that they can be completely cured. Radiologic examinations often can identify abnormalities very early in the progression of a disease — long before they become apparent with other types of diagnostic tests.

Today, magnetic resonance imaging is the pivotal diagnostic examination in the detection of brain tumors; chest radiography is the gold standard in the diagnosis of lung cancer; nuclear

medicine exams are used to image skeletal metastases; and sonography and computed tomography are used to detect and stage gastrointestinal cancers.<sup>3</sup> Table 1 shows the broad range of radiologic examinations used to detect and diagnose several common types of cancers. This list, while by no means complete, attests to medical imaging's importance in cancer identification.

### *The Example of Mammography*

Perhaps no better example exists of radiology's role in the early detection of cancer than that of screening mammography. Until the early 1970s, the American medical community emphasized breast self-examination and annual physical examination to detect breast cancer; the use of mammography for detection was not recommended.<sup>4</sup> In 1973, however, a landmark

**Table 1. Radiologic Procedures Used to Detect and Diagnose Cancers\***

| <i>Type of Cancer</i>  | <i>Radiologic Procedures Used in Detection or Diagnosis</i>                    |
|--|--|
| Bone cancer  | Nuclear medicine bone scans, MRI, CT, angiography, radiography                 |
| Breast cancer  | Mammography, sonography, MRI, CT, nuclear medicine                             |
| Colorectal cancer  | Barium enema study, nuclear medicine   |
| Esophageal cancer  | Radiography, barium studies, cinefluorography, MRI, CT, nuclear medicine       |
| Gastric neoplasms  | Gastrointestinal radiography   |
| Gynecological cancers  | Sonography, lymphangiography, CT   |
| Head, neck and thyroid cancers                                 | Radiography, fluoroscopy, barium studies, angiography, MRI, CT                 |
| Hodgkin's disease  | Chest radiography, lymphangiography, MRI, CT                                   |
| Liver cancer   | Sonography, MRI, CT, angiography   |
| Lung cancer  | Chest and bronchial radiography, fluoroscopy, MRI, CT, barium studies          |
| Ocular cancer  | MRI, CT, sonography  |
| Pancreatic cancer  | Sonography, fluoroscopy, CT  |
| Pituitary cancers and cancers<br>of the central nervous system | MRI, CT  |
| Prostate cancer  | Transrectal ultrasound, MRI, CT, nuclear medicine                              |
| Urologic cancers   | Radiography, intravenous pyelogram, urography, nephrography, abdominal CT, MRI |

\*Information compiled from: Holleb A, Fink DJ, Murphy GP, eds. *Textbook of Clinical Oncology*. Atlanta, Ga: American Cancer Society; 1991.

study known as the Breast Cancer Detection Demonstration Project evaluated the effectiveness of screening mammography. Of 2,567 cancers diagnosed in 282,000 women, 41.6 percent of them were detected *only* by mammography.<sup>4</sup> Even more impressive, the study showed that 38 percent of all cancers detected by mammography were less than 1 cm in size. These smaller, early-stage cancers are more likely to be cured. In fact, mammography can detect breast tumors up to two years before a woman or her physician can feel a lump.<sup>5</sup> Finding a tumor early significantly improves a woman's chance of successful treatment.

But mammography is useful only if it is accurate. That's why American women, cancer research groups and the federal government in the early 1990s began investigating a way to ensure high-quality mammography for early breast cancer detection, which in turn can lead to early treatment and increased chance of survival. These groups showed that the effectiveness of mammographic services was threatened by inconsistencies in the quality of equipment, a lack of quality assurance procedures, and poorly trained mammographers and interpreting physicians. To address these shortcomings, Congress passed the Mammography Quality Standards Act in 1992, establishing national standards for the education, certification and experience of personnel performing and interpreting mammograms. Since April 1, 1995, it has been illegal for a facility to provide mammography services without accreditation by an approved body and certification by the U.S. Food and Drug Administration.

In signing MQSA into law, Congress recognized the vital link between image quality and cancer detection. The MQSA Final Rule,<sup>5</sup> issued in October 1997, noted: “[A mammogram] must be of high quality for the image to be interpreted correctly. If the image quality is poor, the interpreter may miss an incipient cancerous lesion. This false negative diagnosis could delay



early treatment and result in an avoidable death or increased morbidity. It is equally true that poor quality images or faulty interpretations can lead to a false positive diagnosis when normal tissue is misread as abnormal. This can lead to needless anxiety for the patient, costly additional testing, and painful biopsies.”

No study has been conducted yet to gauge the full impact of MQSA, but a 1989 Michigan law that presaged the Mammography Quality Standards Act may give an indication of how important MQSA is to American women. With the passage of Public Law No. 56 in 1989, Michigan became the first state to implement stringent mammography quality assurance legislation. A recent study in the *American Journal of Public Health*<sup>6</sup> examined the influence of the Michigan law. Results showed that mammographic image quality improved significantly in Michigan after implementation of the legislation. The study argued that “Good radiographic imagery is a necessary prerequisite for accurate interpretation” and concluded that “It is likely that the experience with the Mammography Quality Standards Act at the national level will be similar to the Michigan experience.”

Thanks to MQSA, the more than 20 million American women who receive a mammographic examination every year have the assurance that competent, qualified personnel are responsible for performing the procedure. The American Society of Radiologic Technologists believes patients scheduled for any type of radiologic procedure should have that same guarantee of quality and competency. The nuclear medicine technologist who uses radiopharmaceuticals to detect a suspected bone tumor and the CT technologist who stages a patient with prostate cancer should be required to demonstrate their competency through education and certification, just as MQSA requires of mammographers.

All diagnostic imaging procedures require a high level of practitioner skill and competency. Accurate diagnosis is virtually impossible without quality medical imaging information, and quality information can be provided only by radiologic personnel educated in anatomy, positioning, exposure technique and radiation safety. To ensure the quality of imaging procedures, the United States needs to adopt a federal standard that establishes a basic level of education, knowledge and skill for operators of all radiologic equipment.

### III. THERAPEUTIC USES OF RADIATION TO TREAT CANCER

Within months of the x-ray's discovery in 1895, physicians began using radiation not only to find cancer, but to treat it.

Today, radiation therapy is the cornerstone of cancer management programs throughout the world. Nearly 60 percent of U.S. cancer patients receive some form of radiation therapy to relieve pain, confine malignancy and prolong life. Radiation therapists — the health care professionals who deliver this life-saving treatment — are on the front lines of the battle against cancer. They work directly with patients and physicians to administer the best possible treatment prescribed.

Cancer patients have benefited from rapidly advancing technology in the field of radiation therapy, which has continually improved therapeutic outcomes. In just the past decade, improvements in the use of simulators, computed tomography and magnetic resonance imaging have revolutionized treatment planning, while advances in neutron therapy, the development of isocentric treatment and the introduction of three-dimensional “beam’s-eye view” systems have transformed the way radiation therapists perform their jobs.

One of the most impressive recent developments is conformal radiation therapy, a technology dependent on multileaf collimation and real-time portal imaging. With multileaf collimation, the leaves of the collimator can be moved independently to force the radiation field to match the irregular shape of a tumor. This technique shields healthy tissues from radiation, allowing therapists to deliver a higher dose while also decreasing the toxicity of the therapy. Stereotactic radiotherapy is a type of 3-D conformal therapy that uses an ultra-precise beam to irradiate tumors to within fractions of a millimeter.

The incredible complexity of these technological advances brought a new level of precision and accuracy to radiation therapy, dramatically improving cure rates for specific types of cancer. But the sophisticated new equipment also demanded higher levels of education and experience from the personnel responsible for administering treatments. Radiation therapy requires more than just precise technology; it also demands skillful application and a high level of human caring. Administered properly, radiation is an invaluable tool in the management of cancer. Most radiation therapy procedures also carry a potential risk, however, and radiation can be harmful if misadministered.

Public awareness of the safety issues involved in radiation therapy procedures was heightened in 1993, when Senator John Glenn held Congressional hearings to investigate reports of patients being mutilated, paralyzed and even killed by overdoses of radiation — radiation that was supposed to cure them. The stories Congress heard during Senator Glenn's hearings included the account of one Ohio woman who had a hole burned into her chest while being treated for breast cancer in 1989. Another widely publicized case involved a 9-year-old child who died of radiation-induced respiratory failure in 1988 after receiving accidental double doses of cobalt-60 radiation to treat a tumor in his sinus cavity. In both cases, the medical personnel delivering the radiation treatments were not certified radiation therapists.

The accurate delivery of cancer-killing radiation depends heavily upon the skill of the person operating the equipment. Certified radiation therapists know how to deliver the precise dose of radiation to a diseased area while sparing surrounding tissues. Uncertified, unlicensed personnel have neither the educational background nor the clinical experience to provide the level of care that cancer patients deserve. At best, they follow a treatment plan without ever

truly understanding its meaning. At worst, their lack of education and experience can result in overdoses or misadministrations of radiation, sometimes with tragic consequences.

That's why it is so shocking that no national education or certification standard exists for the personnel who administer radiation therapy procedures, just as none exists for medical imaging technologists. Thirty-three states have some type of licensure requirement for radiation therapists, but those requirements vary dramatically from state to state. In the other 17 states, certification is voluntary.

Every year, hundreds of thousands of cancer patients place their trust in radiation therapists and the treatments they administer for relief from pain, confinement of malignancy and, in many cases, survival. Radiation therapists should be required to demonstrate, through education, certification and licensure, that they deserve that trust. The establishment of federal minimum standards for those who practice in the profession would help accomplish that goal.

Inadequately trained, uncertified radiation therapists represent a risk to patients and have no place in the modern health care environment. To protect American patients, we must convince Congress to establish employment standards for all radiologic personnel. Doing so will help ensure that radiation therapy continues to offer cancer patients the greatest promise of all — hope.

#### IV. RADIATION RISKS

It is ironic that the administration of radiation, which so successfully detects and treats disease, also can cause it. But exposure to any radiation holds the potential for harm, and because dosages are cumulative, the effects of low-level radiation may take as long as 20 years to show up. Biomedical research shows that exposure to excessive levels of radiation can cause spontaneous abortion, genetic damage, skin burns and other types of injuries, as well as increase the likelihood of leukemia and other cancers. According to Dr. Arthur Upton, former director of the National Cancer Institute and chairman of the National Research Council's Committee on Biological Effects of Ionizing Radiation (BEIR),<sup>7</sup> "Increasing doses of radiation produce proportional increases in solid cancers of the breast, lung, stomach, ovary and other organs." Dr. Upton has estimated that the long-term effects of overexposure to radiation during diagnostic imaging examinations may be responsible for more than 3,500 cancer deaths a year.<sup>8</sup>

Medical diagnostic radiology accounts for about 90 percent of the total man-made radiation dose to the U.S. population. In many cases, much of this radiation is excessive and unnecessary because it is inappropriately or inaccurately delivered by untrained personnel.

Because certified radiologic technologists are educated in radiation safety, they understand the importance of protecting patients from overexposure to radiation. They use proper shielding techniques to protect radiosensitive areas such as the thyroid, reproductive organs and eyes, and they use collimation techniques to limit the size and intensity of the x-ray beam. In fact, a 1976 study based on data from the Nationwide Evaluation of X-ray Trends (NEXT) program showed that certified radiologic technologists deliver a significantly lower radiation dose to the patient than untrained operators during x-ray examinations of the lumbosacral spine,

cervical spine, lateral skull and abdomen.<sup>9</sup> The authors of the study concluded, “These data give clear evidence of the need for trained operators and the need for continuing education of radiologic technologists.”

Unfortunately, with the exception of the Mammography Quality Standards Act, government regulation in the field of radiology has focused on medical equipment rather than medical personnel. Even more ironic, beginning in 1999, the federal government will require mandatory certification of industrial radiographers — the personnel who x-ray machine parts to test their internal stability and reliability.<sup>10</sup> Although Congress sees the need to verify the competency of those who examine machinery, it has not yet recognized the importance of establishing minimum standards for those who perform radiologic procedures on patients. This is difficult to understand, because no other factor has a greater influence on the quality of a radiologic procedure than the competency of the person who performs it.

## V. CONCLUSION

Certified radiologic technologists help ensure the safety, quality and efficacy of any procedure they perform. To become certified, they must complete at least two years of formal education in radiation protection and radiologic technique and then pass a national certification exam. To remain certified, they must earn continuing education credits. By comparison, uncertified personnel often are permitted to examine patients after receiving as little as 10 hours of on-the-job training.

This lack of uniform standards nationwide for operators of radiologic equipment poses a hazard to the public and jeopardizes quality health care. To correct this potentially dangerous

situation, Congress must establish national minimum standards for the education and certification of radiologic technologists. The Consumer-Patient Radiation Health and Safety Act of 1981 already provides the states with a set of standards to evaluate the competency of radiologic technologists. What the Act lacks is an enforcement mechanism. The ASRT and other health care organizations propose that legislation be introduced in Congress to require states to adopt licensure programs for radiologic technologists that are at least as stringent as the federal standards presented in the Consumer-Patient Radiation Health and Safety Act. States that do not comply would risk losing federal grants, loans, contracts or other forms of financial assistance or reimbursement, including Medicare and Medicaid, for radiologic services.

American patients should not have to question the competency of individuals providing their radiologic care. Instead, the burden should be placed upon the states to guarantee that only qualified personnel examine and treat patients.

Accurate diagnosis, precise treatment and effective follow-up are vital components of any cancer management program. Certified radiologic technologists and radiation therapists are indispensable members of the health care team that provides these life-saving services. The care they offer can mean the difference between misdiagnosis and early detection, between metastases and confinement, between recurrence and cure. Their role is too important to leave to inadequately trained, uncertified personnel.



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## PROFILE OF A RADIOLOGIC TECHNOLOGIST

What is an R.T.?

A Radiologic Technologist:

1. utilizes modern principles of radiation exposure, radiation physics, radiation protection, and radiation biology to produce diagnostic images.
2. utilizes knowledge of medical terminology, pathology, cross-sectional anatomy, topographic anatomy, anatomy and physiology, positioning, procedures and radiographic processing to produce diagnostic images.
3. provides direct patient care, such as taking vital signs; performing EKGs, phlebotomy procedures, CPR, lifting/transferring patients and patient assessment; and administering contrast media and other drugs.
4. evaluates radiographs for diagnostic quality.
5. provides patient education and family education regarding procedural care, as well as other education related to the types of examinations performed on patients.
6. contributes skills and is able to communicate with other members of the health care team.
7. is generally computer literate and has specific working knowledge of workplace applications and programs.
8. understands legal and ethical concerns of the practice.
9. screens radiographs for abnormal versus normal pathology and the need for additional views.
10. has advanced knowledge of radiographic procedures and attends educational meetings to keep aware of any changes in the field.
11. has superior decision-making skills.
12. is an advocate for the patient.

## PROFILE OF A RADIOLOGIC TECHNOLOGIST

13. is able to communicate effectively at the interprofessional level.
14. has a working knowledge and hands on experience in trauma radiography.
15. is ready and capable of helping manage individual patient problems.
16. possesses education in the following areas:critical-thinking skills, liberal arts, basic sciences, communication skills, affective skills(dependability) and computer science.
17. is committed to lifelong learning.
18. is active in professional societies and community activites.
19. is dedicated to providing the best possible customer service.
20. is a significant contributor of the health care team.

### Technical Standards:

1. transports, moves, or lifts patients from a wheelchair or lifter to an x-ray table or to a patient bed.
2. moves, adjusts, and manipulates a variety of radiographic equipment(including the physical transportation of portable x-ray machines) in order to arrange the equipment and align it properly with respect to the patient and the image receptor according to established procedure.
3. physically places patients in the proper positions for the examination according to established procedures and standards.
4. communicates verbally in an effective manner in order to explain and direct patients as it relates to their examination.
5. provides physical and emotional support to the patient during radiographic procedures and is able to respond to medical emergencies with speed.
6. calculates and selects the proper technical exposure factors according to individual requirements of the patient.
7. evaluates radiographs for identifying proper patient position, proper radiographic exposure, and other pertinent technical qualities.

\*\*\* A radiologic technologist may have specialized training and work in other areas such as CT, Mammography, MRI, Nuclear Medicine or Ultrasound.

## American College of Radiology Executive Summary on Radiologic Technologist Licensure

*This executive summary appears on the American College of Radiology's web site, [www.acr.org](http://www.acr.org).*

### *Overview*

One of the most active issues tracked by state chapters over the last five to ten years has been the licensure of radiologic technologists. In 1987, the ACR developed a resource document to assist chapters with this issue. The legislative activity on this issue has largely been the result of state radiologic technologist organizations who have proactively supported rigorous licensure requirements.

### *Experience*

As many as 33 states (this number represents some states that now have licensure bills for mammography only and enabling legislation in three states) have enacted state radiologic technologist licensure laws. This number has grown significantly since the early 1980s. In 1981, there were just 12 states where licensure was required. By 1988, that number had jumped to 21.

These laws vary dramatically in their inclusiveness of modalities effected, education, training and/or experience requirements, grandfathering provisions, make-up of the boards, decision-making process for regulatory development, and many other factors.

In 1986, the ACR endorsed the following statement:

*"The American College of Radiology supports licensure, certification or other appropriate methods designed to assure the qualifications of all persons operating equipment emitting ionizing radiation."*

Much of the opposition to radiologic technologist licensure bills have come from existing personnel who would be forced to upgrade their qualifications as a result of the proposed legislation. In addition, state chapters can expect opposition from primary care physicians and others who use radiologic equipment but typically do not employ technologists who would be "qualified" under the proposed bill. Such licensed personnel would undoubtedly prove to be more expensive and could displace current personnel working in such offices. State chapters should also note the possible effect of the proposed bill on the delivery of radiological services. Most opponents have used the argument that rigorous radiologic technologist licensure laws will reduce critical access to radiology services.

ACR state chapters should be aware of the arguments that will be voiced by their opposition on this issue. Generally speaking, radiologists have been successful in supporting legislative efforts for licensure of radiologic technologists by stressing the

importance of qualified personnel in the delivery of quality radiological care and stressing the need for radiation protection provisions with the use of radiological modalities. State medical associations have varied in their support or opposition to this type of legislation, often trying to find an accommodating bill between the status quo and the more rigorous bill being offered by the state's radiologic technologists.

#### Resources

The American College of Radiology developed a resource document for their state chapters in 1987. The resource document provided chapters with an overview of the Consumer-Patient Radiation Health and Safety Act, a subsequent proposed rule developed from that legislation, a breakdown of legislation existing at the time, a breakdown of the composition of state licensure boards, key contact lists, and model legislation. In addition, the ACR has personnel well versed in this issue at the ACR headquarters office that would be happy to assist ACR chapters.

For more information, please contact Brad Short, ACR Government Relations Department, at 703-648-8975 or 800-227-5463.

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Revised: 10 July, 1997

**States with Enacted Full Licensure/Certification Laws and Year of Implementation  
(As of January 1998)**

Arizona-1977  
California-1969  
Connecticut-1993  
Delaware-1989  
Florida-1979  
Hawaii-1974  
Illinois-1990  
Indiana-1982  
Iowa-1987  
Kentucky-1978  
Louisiana-1984  
Maine-1984  
Maryland-1992  
Massachusetts-1987  
Minnesota-1997  
Mississippi-1996  
Montana-1977

Nebraska-1987  
New Jersey-1968  
New Mexico-1983  
New York-1965  
Ohio-1995  
Oregon-1979  
Puerto Rico-1963  
Rhode Island-1994  
Tennessee-1982  
Texas-1987  
Utah-1989  
Vermont-1984  
Virginia-1997  
Washington-1991  
West Virginia-1977  
Wyoming-1985

**States with Partial Licensure Laws**

Colorado—Laws for mammography and limited (non-ARRT registered) licensure only.  
Michigan—Laws for mammography only.  
Nevada—Laws for mammography only.  
Pennsylvania—Technologists who have not passed the ARRT or other board-approved examination must pass a state examination in order to perform patient examinations in physician, osteopathic physician, podiatrist, chiropractic or dentist offices.

**States without Licensure Laws or with Legislative Proposals Being Considered**

Alabama  
Alaska  
Arkansas  
District of Columbia  
Georgia  
Idaho  
Kansas  
Missouri

New Hampshire  
North Carolina  
North Dakota  
Oklahoma  
South Carolina  
South Dakota  
Wisconsin

# SOCIETY OF RADIOLOGIC TECHNOLOGISTS

## Questions and Answers About Licensure

- Q. How does the unregulated practice of radiologic technology endanger the public?  
A. As physics and radiation biology textbooks attest, there is no threshold level for damage to healthy tissue due to ionizing radiation. In other words, there is no dose so small that it cannot potentially cause biological damage.
- Q. What about alternatives to licensure, such as a proficiency examination or certification by a professional association?  
A. The problem with some alternatives to licensure is that they are voluntary and many practitioners will choose not to comply. State licensure programs are the most effective way to control the practice of uncredentialed individuals. As a result, licensure offers the public the best protection from unnecessary exposure to ionizing radiation and the highest quality patient care.
- Q. How will the public benefit from licensure of radiologic technologists?  
A. The public benefits by receiving care from properly educated, credentialed professionals who have met all the requirements to practice radiologic technology.
- Q. How do we ensure the competence of radiologic technologists?  
A. No one can be one hundred percent sure of the competence of any professional, whether in medicine, law or radiologic technology. However, steps to ensure the competence of individual practitioners can be taken. Accredited educational programs and state licensure programs are the main mechanisms for ensuring the competency of radiologic technologists. The curriculum for educational programs in radiologic technology is competency based, meaning that students must meet performance objectives. The national certification examination is a criterion-referenced, performance-based examination that has demonstrated high validity and reliability.
- Q. Do the benefits of licensure justify the costs?  
A. As with any endeavor, licensure requires a cost vs. benefit analysis. This is especially important in light of rising health care costs. Many states that have already implemented licensure programs saved the cost of developing an examination by contracting with the American Registry of Radiologic Technologists to use the national certification examination as their state licensing examination. Also, many states use license fees to fund their licensure program. Overall, the impact on state budgets and the health care economy are minimal.
- Q. How will licensure affect the job market? Will it drive wages up, forcing employers to cut costs or raise patient fees?  
A. As with any other profession or occupation, the primary objective of licensing radiologic technologists is not to create a favorable supply/demand arrangement. Rather, the objective is to restrict practice to individuals who meet certain

standards and improve the quality of patient care. In California and New York, states with long-standing licensure laws, there has been no appreciable increase in average salaries for radiologic technologists since the laws passed.

- Q. Won't licensure lead to fragmented care and higher health care costs, in effect creating an obstacle to health care delivery?
- A. The major objective of licensure is to solve the problem of uncredentialed practitioners performing radiologic examinations on human beings. Related objectives are to reduce unnecessary radiation exposure and reduce costs associated with repeat examinations. Far from creating obstacles, properly educated and credentialed practitioners streamline health care and ensure the highest possible quality of care.



**American Society of Radiologic Technologists (ASRT) Mission Statement**

The American Society of Radiologic Technologists (ASRT) is the membership society for all professionals in the radiologic sciences. ASRT exists to continually elevate the status of the profession.

Three elements are central to our mission:

- Promotion of quality radiologic services.
- Advocacy for the profession, our affiliates and our members.
- Provision of quality continuing professional development.

We actively ally and collaborate with related groups to support advances in health care. Our perspective, while specifically representing the radiologic sciences, recognizes the systemic nature of the health care profession and our role as a responsible participant in shaping the larger system for the benefit of those it serves.

We continually strive to be both responsive and anticipatory in support of our affiliates and our members. Effective communication within the organization is a vital component of our efforts to be responsive.

We are committed to a core set of values that include the integrity of the profession, the worth of each professional and a sound ethical stance. We will both influence the profession and operate our organization on this basis.

**North Dakota Society of Radiologic Technologists (NDSRT) Mission Statement**

The North Dakota Society of Radiologic Technologists (NDSRT) is a membership society for all professionals in the radiologic sciences. We, as an affiliate of the American Society of Radiologic Technologists (ASRT), work as advocates, together with others, to promote quality patient care. We serve the needs of our members by providing education and the means of networking and communicating information. We are committed to our profession, the ethical values we embrace, and the continued professional development needed to uphold the quality of services we provide.

# The Radiographer

## A career for you?

An indispensable diagnostic tool of modern medicine is radiation. Broken bones can be aligned, ulcers can be detected, and many other injuries and diseases can be treated when the exact nature is known to the physician. The health professional responsible for performing radiographic examinations is the radiographer.

### WHAT IS RADIOGRAPHY?

Radiography is the art and science of using radiation to provide images of the tissues, organs, bones, and vessels that comprise the human body. These images may be recorded on film or displayed on a video monitor. Sometimes, motion picture film or videotape is used. Radiologists (physicians who have had special training in interpreting x-ray images) read or diagnose these images. Treatment of a patient depends on the accurate and precise production of radiographic examinations.

### WHAT DOES A RADIOGRAPHER DO?

The radiographer is an essential member of the health-care team. The body part of the patient must be accurately positioned, and only the amount of radiation necessary to produce a quality diagnostic image must be applied. These are two important aspects of the responsibilities of the radiographer. **Radiation, when used by persons uneducated in its characteristics and potential hazards, can be dangerous to the patient and the user.** The radiographer understands radiation and knows how to produce quality diagnostic examinations safely. This protects both the patient and the radiographer.

With this knowledge, radiology is a safe career. It is also a satisfying career. The radiographer contributes a special talent to help diagnose injury and disease.

### HOW CAN I BECOME A RADIOGRAPHER?

To meet the demands of modern medicine, the radiographer must have a well-planned education. This education may be obtained by a variety of routes:

- 2-year hospital-based certificate program
- 2-year associate degree program
- 4-year baccalaureate program

Your choice of program type may depend on a number of factors including program locale, cost and your career goals.

Be sure that the program you select is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Upon completion of an accredited program, the graduate is eligible for certification by the American Registry of Radiologic Technologists.

Admission requirements for individual programs vary. Generally, prerequisites of mathematics and science are necessary. Candidates should have a sincere interest in helping people.

### WHAT OPPORTUNITIES ARE AVAILABLE TO THE GRADUATE RADIOGRAPHER?

Opportunities are many and varied. Graduates are needed to fill the demands of many hospitals and clinics providing patient services around the clock. Various shift assignments may be available.

With experience, the career of a radiographer can advance in various directions:

Advanced Technology ✦ Supervision/Management ✦ Education/Research

Other modalities of Radiologic Technology,

Radiation Therapy ✦ Nuclear Medicine ✦ Ultrasound ✦ CT Scanning ✦ MRI

In a variety of settings ....

Hospital ✦ Clinic ✦ Private Office ✦ College/University ✦ Commercial Sales

Salaries for the entry level Radiographer are competitive with other health professionals with similar educational background.

# Ask an R.T.

## **?? IS YOUR X-RAY TECHNOLOGIST REGISTERED??**

**R.T.** (Registered Technologist) is the official national certification for professionals in Radiologic Science.

## **?? IS YOUR X-RAY TECHNOLOGIST REGISTERED??**

Medical information contained on an X-Ray is directly related to the qualifications of the operator.

## **?? IS YOUR X-RAY TECHNOLOGIST REGISTERED??**

Amount of radiation received during an X-Ray examination is directly related to the education, training and experience of the operator.

## **?? IS YOUR X-RAY TECHNOLOGIST REGISTERED??**

Registered Technologists (**R.T.**) have a moral and ethical responsibility to protect the patient from unnecessary exposure to ionizing radiation.

## **?? IS YOUR X-RAY TECHNOLOGIST REGISTERED??**

Studies have shown that the consumer/patient receives as much as **100** times more radiation for the same X-Ray exam in one institution as in another because of unqualified operators of X-Ray equipment.

## **?? IS YOUR X-RAY TECHNOLOGIST REGISTERED??**

North Dakota has only voluntary standards for operators of ionizing radiation machines in the Healing Arts. Only **R.T.**'s meet nationally accepted minimum standards.

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PLEASE SUPPORT MINIMUM STANDARDS

# RADIATION IN CANCER TREATMENT

**RADIATION THERAPY** IS THE SAFE AND PRECISE USE OF HIGH ENERGY X-RAYS TO TREAT CANCER.

**RADIATION THERAPY** IS ADMINISTERED BY THE RADIATION ONCOLOGY TEAM.

RADIATION ONCOLOGIST: THIS IS THE PHYSICIAN WHO PRESCRIBES YOUR TREATMENT.

ONCOLOGY NURSE: THIS NURSE SPECIALIZES IN CANCER NURSING PROCEDURES.

RADIATION THERAPIST: THIS REGISTERED TECHNOLOGIST (RT) ADMINISTERS THE TREATMENTS.

MEDICAL DOSIMETRIST: THIS SPECIALIST CREATES THE TREATMENT PLAN BASED ON THE PHYSICIAN'S PRESCRIPTION.

RADIATION PHYSICIST: THIS PERSON OVERSEES THE OPERATION OF EQUIPMENT AND CONFIRMS CALCULATIONS UTILIZED IN PLANNING AND TREATMENT.

RECEPTIONISTS AND OTHER SUPPORT STAFF:

**RADIATION THERAPY** CAN BE USED ALONG WITH CHEMOTHERAPY AND SURGERY TO TREAT CANCER.

**RADIATION THERAPY** IS USED TO RELIEVE PAIN DUE TO CANCER.

**RADIATION THERAPY** TREATMENTS TAKE APPROXIMATELY 15 MINUTES TOTAL ON A DAILY BASIS.

**RADIATION THERAPY** TREATMENTS FOR EACH TYPE OF CANCER AND EACH INDIVIDUAL PATIENT ARE SPECIFIC TO THAT PERSON AND THE CIRCUMSTANCES SURROUNDING THEIR DIAGNOSIS.

**RADIATION THERAPY** TREATMENTS VARY FROM ONE TREATMENT TO AS MANY AS 45 TREATMENTS DEPENDING ON THE TYPE AND STAGE OF THE CANCER.

**RADIATION THERAPY** SIDE EFFECTS ARE SPECIFIC ONLY TO THE AREA BEING TREATED WITH THE EXCEPTION OF FATIGUE.

**RADIATION THERAPY** DOES NOT CAUSE ALL OVER HAIR LOSS. IT IS SPECIFIC TO THE AREA OF TREATMENT.

**RADIATION THERAPY** PATIENTS DO NOT GLOW AND ARE NOT RADIOACTIVE.

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## PLEASE SUPPORT MINIMUM STANDARDS

# MQSA's Effects 'Absolutely Positive'

KATHLEEN MARTELL  
STAFF WRITER

It pushes for federal minimum standards in the radiologic sciences. You may wonder how the proposed standards could affect them, their practices and their patients.

For an answer, they need look no further than the specialty of mammography, which was regulated in 1995 by the Mammography Quality Standards Act of 1992.

As a result of the act, manufacturers are required to maintain periodic quality control tests on their processors, equipment and films, MQSA sets initial and continuing education requirements for mammographers, interpreting radiologists and medical physicists.

The U.S. Food and Drug Administration issued final MQSA regulations last fall, and while meeting MQSA standards isn't easy, mammographers agree that the law benefits everyone.

"Standards of quality have gone up tremendously," said Edna Marr, R.T.(R)(M), a mammographer at the Breast Specialty Center at Providence St. Vincent Hospital in Portland, Ore., and chairman of the ASRT Mammography Chapter Steering Committee.

"People are now aware of the standards for a good mammogram and no one can perform mammography without meeting these standards. Super quality mammograms are just expected now."

Ms. Marr traces MQSA's beginnings to a story on mammography quality that aired on the TV news show *Primetime Live* several years ago.

"The public took off with it and put pressure on Congress," she said. After that, "many facilities began to get ACR accreditation that hadn't had it before." When Congress passed MQSA, accreditation and certification became mandatory.

Cathy Parsons, R.T.(R)(M), manager of the mammography department at

Roane Medical Center in Rockwood, Tenn., agrees that MQSA has improved mammography quality across the board.

"The film quality, positioning, everything is better than it was 10 years ago, and a large percentage of that is due to MQSA requirements," said Ms. Parsons, a member of the steering committee. "I think there are more quality people performing mammograms today because of MQSA."

As a result, mammographers have seen their professional prestige rise.

"The public views mammographers at a higher level now," said Ms. Parsons. "They realize that mammographers are highly skilled professionals."

MQSA "brings pride to our job," added Ms. Marr. "We know that we're doing a good job and we're more appreciated by other technologists who aren't doing mammography."

Another benefit of MQSA is that patients are better informed about mammography today than they were before the law took effect. About 40 percent of patients at Ms. Parson's facility ask about accreditation, she said.

"Patients are more knowledgeable about mammography because of MQSA and they expect a quality exam," said Michael Rector, R.T.(R)(M)(QM), quality control manager of radiology and mammography at Ball Memorial Hospital in Muncie, Ind. "They expect more expertise from mammographers."

Mammographers report no problems finding the courses they need to fulfill MQSA's educational requirements.

"There are plenty of opportunities locally for initial training and CE," said Ms. Parsons. "There's no excuse not to have your continuing education credits."

Mr. Rector said his employer offers a variety of mammography CE courses in-house.

Of course, MQSA's benefits have come at a cost. Mammographers say they now have less time for patients because of MQSA's quality control requirements.

"There's a lot more paperwork involved, so you have to be more efficient with your time," Ms. Parsons said. "But in the long run you can see that you're doing the patient more good. The patient outcome is better."

"MQSA requires better record keeping," Mr. Rector pointed out. "Some technologists aren't interested in this — they would rather be involved in patient care." However, "you can't get behind. You really have to stay on your toes because there can be an unannounced visit (by inspectors) at any time."

Although time-consuming, the daily, weekly, monthly and semi-annual quality control procedures result in better-maintained mammography equipment, according to Mr. Rector.

"Sometimes it seems like too much," said Ms. Marr. "Some of it doesn't seem like it makes a lot of sense, but eventually it all comes together and in the long run it raises standards. It's good to know that the equipment is performing as it should."

Some mammographers expressed concern that MQSA inspectors may apply different standards or interpret requirements differently.

Ms. Parsons doesn't share those concerns, however. She has found MQSA inspectors very helpful, noting that if they discover a problem, they often provide information and suggestions to help solve it.

Yet another drawback of MQSA is the expense associated with continuing education and quality control.

"The cost has been a burden, especially for small institutions," conceded Ms. Marr. However, "we're trying to keep costs under control," and, all considered, "the benefits far outweigh the costs," she added.

"I'm proud to be in a country that requires these standards." ▼



#### **IV. AGREEMENTS WITH STATE LICENSING AGENCIES FOR USE OF THE EXAMINATION FOR THE LIMITED SCOPE OF PRACTICE IN RADIOGRAPHY**

##### **Introduction**

In 1985, the Board of Trustees of The American Registry of Radiologic Technology announced its willingness to enter into agreements with states to administer ARRT-developed examinations covering radiography of the chest or radiography of the extremities to state-approved examinees beginning with the March 1986 administration. The announcement culminated a three year project in which representatives from licensing states participated in various meetings and surveys. The information in this section provides an overview of the developmental stages of the project as well as the current status of the project.

##### **History of the Project**

In early 1983, acting upon requests from several states, the ARRT Board of Trustees authorized the development of an examination covering the tasks performed by someone having a scope of practice limited to radiography of the chest as well as an examination for a scope of practice limited to radiography of the extremities. Although developed and administered by the ARRT, the intended purpose would be solely for use by state licensing agencies. No certification would be awarded by the ARRT based upon the examination. It was further stated that it was the philosophy of the ARRT that those persons having a scope of practice that is limited to radiography of the chest or extremities must be as knowledgeable in those particular areas as is the technologist whose scope of practice reflects that of the general staff radiographer at entry level as defined by the ARRT Job Analysis Project. That is, if the same task is performed, the same knowledge and cognitive skills underlying the intelligent performance of the task as identified for the general staff technologist will be required. It was the stated intention of the Board of Trustees that the depth of understanding required for the intelligent performance of a task not be limited, but rather only that the breadth of content coverage be limited according to the particular tasks performed.

That statement of philosophy was very important to the conduct of the project. It meant that content specifications for the limited scope examination could be developed by identifying those tasks from the list of tasks for the general radiographer which would be appropriate for the limited permit holder. Any knowledge or skills underlying performance of those tasks by the general radiographer should be assessed also by the limited scope examination.

In July 1983 a meeting was held to review the list of tasks for the general radiographer and select those that were felt to be appropriate for a limited permit holder. A survey form was developed based upon the results of this meeting and sent to all states then involved in limited licensing for comment. The results of that survey indicated that there was substantial agreement among states regarding what tasks were appropriate.

In June 1984 a meeting of state representatives was held to review a draft document listing the knowledges and skills necessary to perform the tasks identified in the previous step. Revisions made at that meeting were incorporated into a set of proposed content specifications for the limited scope examination and mailed to all licensing states for comment. The results of that mailing were reviewed by the ARRT Board of Trustees in January 1985 and the content specifications finalized. The document was distributed to all states at that time. The document represented the consensus of the participating states regarding what should be covered on a limited scope examination.

Although states had agreed that the content specifications did cover the appropriate content areas, it was possible that the translation of those specifications into an actual form of the examination could result in an instrument which did not meet a state's needs. A meeting was held in July 1985 at which representatives from twelve licensing states (AZ, CA, FL, HI, IN, KY, ME, MT, NJ, NM, OR, VT) reviewed a draft of the examination assembled from the content specifications. Questions which the group felt did not adequately reflect the content specifications were deleted and replaced by other items from the item bank used on the general radiography examination. In general, questions from the general radiography examination item bank were not modified for use on the limited scope examination. The policy of using the same form of the items for both the general radiography examination and the limited scope examination satisfied the philosophy that if the same depth of understanding was required for common tasks, then two separate versions of items were not necessary. Follow-up activities carried out by mail resulted in the first form of the *Examination for the Limited Scope of Practice in Radiography*. Additional items were identified by the group during the meeting thereby allowing the assembly of alternate forms of the examination for future use.

In June 1988, the ARRT Board of Trustees authorized the development of three additional, separately scored categories for skull/sinus, spine, and lower extremity (podiatry).

**Appendix LS**  
**Task Inventory for Limited Scope of Practice in Radiography**  
**Effective March 1996**

1. Evaluate the need for and use protective shielding.
2. Take appropriate precautions to minimize radiation exposure to patients.
3. Restrict beam to limit exposure area, improve image quality, and reduce radiation dose.
4. Set kVp, mA and time or automated exposure system to achieve optimum image quality, safe operating conditions, and minimum radiation dose. \*
5. Prevent all unnecessary persons from remaining in immediate area during x-ray exposure.
6. Take appropriate precautions to minimize occupational radiation exposure.
7. Wear a personnel monitoring device while on duty if required.
8. Review individual occupational exposure reports if required to wear a personnel monitoring device.
9. Warm-up x-ray tube according to manufacturer's recommendations.\*
10. Prepare and adjust radiographic unit and accessories.
11. Perform visual inspection of radiographic equipment and accessories (e.g., lead aprons, collimator operation).
12. Recognize and report malfunctions in the radiographic unit and ancillary accessories.
13. Inspect and clean screens and cassettes.
14. Perform start-up or shutdown procedures on automatic processor.
15. Recognize and report problems in film processing.
16. Process exposed film in accordance with manufacturer's recommendations.
17. Reload cassettes by selecting film of proper size and type.
18. Store film/cassette in a manner which will reduce the possibility of artifacts (e.g., fog, static).
19. Determine appropriate exposure factors (within tube limitations) using calipers and technique charts.
20. Modify exposure factors for circumstances such as involuntary motion, casts and splints, pathological conditions, or patient's inability to cooperate.
21. Use radiopaque markers to indicate anatomical side, position or other relevant information.
22. Evaluate radiographs for diagnostic quality.

\* Note: Tasks followed by an asterisk (\*) do not apply to podiatric radiography.



23. Determine corrective measures if radiograph is not of diagnostic quality and take appropriate action.
24. Select equipment and accessories for the examination requested.
25. Remove all radiopaque materials from patient or table that could interfere with the radiographic image.
26. Explain breathing instructions prior to making the exposure.
27. Position patient to demonstrate the desired anatomy using body landmarks.
28. Examine radiographic requisition to verify accuracy and completeness of information.
29. Utilize universal precautions.
30. Confirm patient's identity.
31. Question female patients of child-bearing age about possible pregnancy.
32. Explain procedure to patient or patient's family.
33. Evaluate patient's ability to comply with positioning requirements for the requested exam.
34. Use proper body mechanics and/or mechanical transfer devices when assisting patients.
35. Provide for patient comfort and modesty.
36. Select immobilization devices, when indicated, to prevent patient movement and/or ensure patient safety.
37. Verify accuracy of patient film identification.
38. Maintain confidentiality of patient information.
39. Use sterile or aseptic technique to prevent contamination of sterile trays, instruments, or fields, if applicable.
40. Recognize need for prompt medical attention and initiate emergency care.
41. Document required information on patient's medical record.
42. Clean and disinfect facilities and equipment, and dispose of contaminated items in preparation for next examination.
43. Follow appropriate procedures when in contact with a patient in reverse/protective isolation.
44. Monitor medical equipment attached to the patient (e.g., IVs, oxygen) during the radiographic procedure.

## **SPECIFIC RADIOGRAPHIC PROCEDURES**

**Position patient, x-ray tube and image receptor to produce radiographs of:**

### CHEST

- 45. Routine Chest (PA, AP, lateral)
- 46. Other Chest (obliques, apical lordotic, decubitus)

### EXTREMITIES

- 47. Toes
- 48. Foot
- 49. Os Calcis
- 50. Ankle
- 51. Tibia and Fibula
- 52. Knee
- 53. Patella
- 54. Femur
- 55. Fingers
- 56. Hand
- 57. Wrist
- 58. Forearm
- 59. Elbow
- 60. Humerus
- 61. Shoulder
- 62. Scapula
- 63. Clavicle
- 64. Acromioclavicular Joints
- 65. Soft Tissue

### SKULL and SINUS

- 66. Routine Skull
- 67. Mastoids
- 68. Facial Bones
- 69. Mandible / Temporomandibular joint
- 70. Zygoma and Arches
- 71. Nasal Bones
- 72. Orbits
- 73. Paranasal Sinuses

### SPINE

- 74. Cervical Spine
- 75. Thoracic Spine
- 76. Scoliosis Series
- 77. Lumbosacral Spine
- 78. Sacrum
- 79. Sacroiliac Joints
- 80. Coccyx

### PODIATRIC RADIOGRAPHY

- 81. Ankle
- 82. Foot

**N O R T H**

**DAKOTA**

# **SOCIETY OF RADIOLOGIC TECHNOLOGISTS**

**Opposition may state the continuing education is to stringent. This fact sheet will show numerous opportunities in North Dakota. Many of which are sponsored by our society, North Dakota Society of Radiologic Technologists(NDRST).**

- NDSRT Annual meeting
  - 10-12 credits
  - rotated between the 4 major cities, Fargo, Bismarck, Minot, Grand Forks
- 2 NDSRT sponsored workshops per year
  - 1 on the eastern side of the state, 7 credits
  - 1 on the western side of the state, 7 credits
- District meetings-monthly
  - 4-7 credits, vary amongst districts
- NDSRT video library
  - all sent via mail order-rental
- Professional journals
  - "Radiologic Technology"-12 credits per year
  - SNM journals-Tech section
- Various institutional sessions offered
- Any and all AMA approved educational sessions
- Equipment and product vendor demonstrations
- Edumed
  - home studies and videos
- Online sites-examples
  - edumed.com
  - arcmesa.com
  - learning.net
  - burwin.com

- ★ 47 years supporting North Dakota Radiologic Technologists
- ★ Members are Nationally Certified — R.T. (ARRT)
- Publishes Quarterly Official State Magazine  
*"Scattered Radiation"*
- ★ Sponsors Annual Conference and Two Workshops
- ★ Maintains an Educational Video Tape Library
- ★ Develops Public Educational Information

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**"Advancing the profession enhances Quality Patient Care, increases consumer satisfaction and is proven cost effective."**

**NORTH  
DAKOTA  
SOCIETY OF  
RADIOLOGIC  
TECHNOLOGISTS**



**NDSRT** is a professional society of Registered X-ray Technologists. We provide health care services in Radiology Departments throughout North Dakota.

**"Registered Technologist" and its abbreviation "R.T. (ARRT)" are the official designation of the American Registry of Radiologic Technologists, the national certification for professionals in Radiologic Science.**

# Professional Profile of a Radiologic Technologist

Radiologic Technologists are health care professionals who provide a variety of diagnostic and therapeutic services within the health care industry. There are numerous disciplines and specialties within the radiologic sciences profession, most of which use ionizing radiation to accomplish the task of health care delivery.

- ★ The **radiographer** uses radiation to produce images of the tissues, organs, bones and vessels of the body that assist in the diagnosis of disease or injury.
- ★ The **cardiovascular-interventional technologist** uses radiation to produce images to aid in the diagnosis and/or treatment of vascular disease or other abnormalities such as coronary artery disease and angioplasty. These individuals may inject the patient with a material that assists in visualizing the images produced.
- ★ The **sonographer** uses high frequency sound waves to produce images of internal structures that assist in the diagnosis of disease or injury and fetal development.
- ★ The **radiation therapist** helps manage the radiation treatment of the patient with cancer and some benign conditions. This management includes daily treatment, patient support and treatment planning.
- ★ The **mammographer** uses radiation to produce images for screening or diagnostic procedures for detection of breast disease. These individuals also provide breast health education.
- ★ The **nuclear medicine technologist** administers radioactive materials (radiopharmaceuticals) to produce images for diagnosis of various disorders. Radiopharmaceuticals also may be used to treat diseases such as thyroid cancer.
- ★ The **computed tomography technologist** uses radiation and a computer to produce cross-sectional images of the body. These individuals also may inject the patient with a material that assists in visualizing the images produced.
- ★ The **magnetic resonance technologist** is a member of the newest specialty within the profession. This individual uses radiowaves, magnetic fields and a computer to produce images of the body tissues. This individual also may inject the patient with a material that assists in visualizing the images produced.

Individuals in each of the disciplines or specialties are educated and practice basic patient care/education, information management and basic laboratory skills. They all are educated in the appropriate radiation safety and equipment quality control measures to assure optimal patient care and public safety.

- **DIAGNOSTIC X-RAY (RADIOGRAPHY).** During a radiographic examination, x-rays are passed through a patient's body and captured on film, video or computer to produce anatomical images.
- **MAMMOGRAPHY.** A low-dose x-ray examination of the breast. A mammogram can detect a small breast tumor years before it can be felt, and mammography is the best way to find breast cancer early.
- **COMPUTED TOMOGRAPHY.** A procedure uses a rotating x-ray unit in conjunction with computer systems to obtain cross-sectional images of patient anatomy.
- **MAGNETIC RESONANCE IMAGING.** An imaging method that uses strong magnetic fields, radiowaves and computers to obtain detailed cross-sectional images of the body.
- **ULTRASOUND (SONOGRAPHY).** Ultrasound images are produced by measuring the intensity of echoes reflected from anatomical structures when ultra-high frequency soundwaves are transmitted into the body.
- **NUCLEAR MEDICINE.** An imaging method that uses trace amounts of radioactive materials to obtain functional information about organs. Special equipment is used to detect the gamma rays emitted by the radiopharmaceuticals and create an image of the body part under study.
- **RADIATION THERAPY.** The delivery of high doses of radiation to treat diseases, particularly cancer. As the radiation strikes human tissue, it produces highly energized ions that gradually shrink and destroy the nucleus of dominant tumor cells.
- **INTERVENTIONAL RADIOLOGY.** The use of radiologic imaging to guide catheters, balloons, stents or other tools through the body to treat disease without surgery.

*The  
best way to ensure  
quality radiologic  
care is to  
demand it.*

**STATES THAT DO NOT LICENSE  
RADIOLOGIC PERSONNEL\***

- |          |                |
|----------|----------------|
| Alabama  | New Hampshire  |
| Alaska   | North Carolina |
| Arkansas | North Dakota   |
| Georgia  | Oklahoma       |
| Idaho    | Pennsylvania   |
| Kansas   | South Carolina |
| Michigan | South Dakota   |
| Missouri | Wisconsin      |
| Nevada   |                |

\*List complete as of June 1, 1998. In addition to these 17 states, the District of Columbia also does not license radiologic personnel.

Provided as an educational service by



American Society of  
Radiologic Technologists

15000 Central Ave. SE, Albuquerque, NM 87123-3917  
505-298-4500 800-444-2778

**Who's  
taking  
your**

**X-ray?**

*Information provided by the  
North Dakota Society of  
Radiologic Technologists*

**T**oday, radiology plays a role in the assessment of virtually every type of injury and many forms of disease. More than 300 million radiologic procedures are performed every year in the United States, and seven out of 10 Americans undergo some type of medical imaging exam or radiation therapy treatment annually.

## **M**ake sure you know who is taking care of you.

Is the person taking your x-ray a qualified professional? You may be surprised to learn that many of the people performing radiologic procedures in the United States are not. In fact, uncertified, unlicensed, inadequately educated individuals examine and treat thousands of radiology patients every day.

As a responsible health care consumer, you should learn the facts about radiologic care and the people who provide it. This brochure can help you make the best choices the next time you or a member of your family needs a radiologic examination.

## **Q**uality health care begins with quality radiologic care.

Any radiologic procedure is only as effective as the person performing it. An underexposed chest x-ray cannot reveal pneumonia or a malignant lesion, just as an inadequate mammography technique cannot detect breast cancer. No matter what the procedure, the radiologic technologist's knowledge of anatomy, careful application of radiation and skillful operation of sophisticated medical equipment are the

keys to its success. To be clinically useful, diagnostic imaging exams must be accurate. To stop invasive cancers, radiation therapy treatments must be precise.

Yet tens of thousands of individuals with limited training and no credentials are working in hospitals and doctor's offices, performing radiologic procedures on patients. That's because the federal government does not regulate people who operate radiologic equipment, and only 33 states have established licensure laws for radiologic personnel. In the 17 states without licensure, individuals are allowed to perform sophisticated radiologic procedures after only a few weeks' training.

## **Q**uestions to ask a qualified radiologic technologist.

How can you ensure that your next radiologic exam or procedure is performed by a qualified, competent individual? Just ask. When you meet the person scheduled to perform your examination, ask if he or she is certified by a national agency or licensed by the state.

Most nationally certified radiologic technologists must complete at least two years of education in radiation protection and technique, pass a comprehensive certification exam and earn continuing education credits annually. Licensure laws at the state level vary, but most require radiologic personnel to



demonstrate their competency through a combination of education, examination and experience.

In addition to asking about employee qualifications, you also should ask questions about the procedure you're scheduled to receive. A competent radiologic technologist will be able to explain the procedure in detail, help you prepare for it and tell you what to expect.

## **E**nsure quality radiology for you and your family.

Uncertified, unlicensed personnel compromise the quality of health care and have no place in the radiology department. If you live in one of the 17 states that does not license radiologic technologists, contact your state legislators and express your concern. In 1981, the federal government provided the states with standards for the education of radiologic personnel and a model statute

for licensure. Urge your legislators to draft a state law that adopts the standards provided by the federal government, known as the Consumer-Patient Radiation Health and Safety Act of 1981.

And even if you live in a state that licenses radiologic technologists, keep in mind that regulations can vary widely. Ask questions, and make certain the person providing your radiologic care is qualified to perform the exam or procedure you are receiving.

Madam Chairman and members of the Human Services Committee, my name is Lisa Stocks-Brush. I am a Registered Radiologic Technologist and Certified Nuclear Medicine Technologists. I currently sit on the North Dakota Society of Radiologic Technologists board as the immediate past president.

We welcome the opportunity to appear before you today and commend the ND State Legislature for it's attention and concerns to this very important subject.


In recent years we have all heard considerable concerns regarding risks from radiation exposure. We must remember 90% of public exposure to man-made ionizing radiation results from medical procedures, primarily diagnostic x-ray examination. Diagnostic x-rays are an invaluable tool in the diagnosis and treatment of disease. However, any unnecessary exposure does produce risk without benefit.

In ND, we do not have any enforceable minimum standards for ionizing radiation operators. Literally, anyone off the street can be hired to operate potentially dangerous equipment. Radiation is not detected by any of our senses, therefore unknowingly; the operator has the potential to produce biological damage not only to the people of ND but also to themselves. More often then not, the patient is unaware of the qualifications of the operator or the quality of the exam they are receiving. They entrust their health and safety to us. We have the moral and ethical responsibility to protect our patient. Unfortunately, the basic chest x-ray, which most of us here have probably had at one time or another, when performed by an uneducated, untrained operator has the potential to deliver 100 times the radiation dose to the patient as the same





procedure performed by a properly educated Radiologic Technologist. Medical radiation procedures are only as safe as the people performing them are. Too many injuries and diseases can be misdiagnosed due to inadequate radiologic examinations. The performance of these exams require substantial knowledge and understanding of the safe operation of x-ray equipment, selection of exposure factors, image recording systems, radiation beam adjustments, as well as, proper patient positioning, and knowledge of human anatomy, physiology, and pathology. Although ND is a very rural state, we feel that every person has the right to safe and diagnostic radiologic procedures. Through education and training we can provide properly trained personal to provide these services to all areas of our state without great hardship.

Radiologic Technologists have a great deal of responsibility. Even though the physician orders the exam, the technologist works independently and uses their judgement and knowledge to not only perform the technical portion of the requested exam, but provide patient care and instruction, We work without direct physician supervision and must think quickly and often are providing emergency lifesaving care. See attached personnel letter regarding radiation burns. This is just one example why we need education for all ionizing radiation operators. We need continuing education to both keep our skills and also to stay current with the ever changing technical aspect of our profession. Technology is changing faster than you can imagine in the field of radiology. We need to know how and when we need to change the exposure technique. Is the patient larger or smaller than average? Do they have an underlying disease that would require more or less penetration of the x-ray beam to provide the radiologist with an optimal image to diagnosis and evaluate the patient for proper treatment. These are decisions made on the spot with every patient we encounter. The more knowledge and understanding we obtain the better



decisions and choices we can make. Radiation physics, radiation protection, radiation biology, as well as, pathology, anatomy, and communication are apart of our daily practices. Applying our knowledge of all these areas to the situation is the key to quality diagnostic exams.

I am standing here today to ask you to support Bill 1311 along with our efforts to establish minimum standards for x-ray operators and increase the education of those individuals now performing x-rays. To protect and provide the best quality care to all the people of ND.



My name is Linda Ottesen. I am a Registered Radiological Technologist.

I am writing you with my concerns about unlicensed Radiological Technologists. I have first hand experience with a non-licensed technologist.

My brother was in a serious truck accident on October 1, 1993. He was taken by ambulance to a rural hospital. Upon arrival the Physician ordered C-spine, T-Spine and L-Spine x-rays.

He was taken to the x-ray department. Very important you always start with the C-Spine in a Trauma accident.

She started with his L-spine first, which there was no problem, as what he tells me the technologist said looked o.k. They proceeded through to the T-spine that also went o.k. until they got to the C-Spine. The Trauma C-Spine series should go as follows: Lateral-, which is the most important! You have to get down to T-1, which will include all of the C-Spine (7 vertebra) This shows if there is a fracture or any misalignment in the C-Spine. If you have a very broad shouldered and or muscular man or woman it sometimes is very hard to get C-7, as you have the shoulders and thick muscle in the way.

In this situation they could not get a good film of C-7. What happened is they kept taking x-ray upon x-ray to try to see C-7? They could not get C-7 so they kept setting higher and higher kV and Mas to try and get through his very broad and muscular shoulders. During this whole time he kept questioning in his mind if this person knew what they were doing! He did not convey that apprehension to the person as they were trying hard not to move his neck. He felt somewhat at ease.

**After working on him for 1 and ½ hours**

They finally achieved one that was o.k. but still would not have been passable if a licensed technologist had taken it. He was sent back to the Emergency Room where the Physician took off the collar and said, “they did not get a real clear x-ray of his C-7, so he would have to go get some more x-rays in Fargo, where they had better x-ray equipment”! I have to put an exclamation here as you don’t need better x-ray equipment, just someone who knows what to do with that equipment and positioning when something doesn’t work!

We took him down to Fargo, got the x-rays and they were able to see C-7 and T-1! It was not because of better equipment; a license technologist who knew what to do with the equipment and positioning of my brother did it.

The ER Physician asked if he had been burnt in the truck on his neck. My brother said “No”; the Physician told him that it was radiation burns from all the x-rays performed on him trying to get C-7! I thought of how much radiation he had to have had to get radiation burns!

I would never have thought twice about this nor does anyone else who has not gone to Radiological School.

I was going to x-ray school at the time of his accident and I did some investigation and found out that this person did not go to X-ray School and in fact was a Lab Technologist! Further investigation proved rather interesting when I found out in the State of North Dakota, You Do Not have go to school to perform x-rays on a person.

When I think of how many people are unaware of not having a licensed technologist in their clinic or hospital. Would they really want them taking x-rays? Or would they want someone who is trained in the Radiology field who would know how to use that equipment and how to position that patient. It's very critical in trauma or any other x-rays that need to be done on your loved one.

Would you want a Pathologist reading your x-rays or would you want a Radiologist reading them who is trained in reading x-rays?

The same holds true in doing x-rays do you want someone whom is trained and licensed doing x-rays? Or do you want someone who will give you radiation burns?

Thank you for your time in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Linda Ottesen".

Linda Ottesen RT (R) (M)

Madam Chairman and members of the committee, my name is, Donna Newman and my background is a medical radiographer with certification in the field of Nuclear Medicine. I represent the North Dakota State Society of Radiologic Technologists. We welcome the opportunity to appear before you today during these hearings on HB 1311. We feel that without the adoption of this bill, the public will continue to be unnecessarily exposed to excess radiation from medically administered x-rays of compromised quality. We commend the committee for its attention to this very timely subject.

We realize that we do have some opposition within the state of North Dakota. WE also know that after you the committee members look at what can be gained by adoption of this HB 1311 you will support quality patient care through standards of care in the field of medical radiography. We would like to take a few minutes to address some common misconceptions about this bill.

One misconception is that rural medicine will be adversely affected by the enactment of HB 1311. I am here today to agree rural medicine will indeed be affected, but the impact will be a positive one. For example, Health Care costs will be reduced. To date, 33 states have developed minimum standards for radiologic technologists. Reports have shown that in fact health care cost actually decreased after such standards were implemented. The state of California submitted their report to the legislature after a 10-year period of requiring licensure for radiologic technologists. The report showed that for the 10-year period, overall medical fees increased 92.7% throughout the state, while fees for radiology services on increased 59.2%. Licensure has not increased the cost of radiology services. On the contrary, it has helped to reduce the increasing costs of health care, when the imaging procedures are performed by knowledgeable radiologic

technologist. Such technologists are competent in reducing radiation exposure to the patient, reducing waste of medical supplies, minimizing procedure time and also decreasing the wear of radiologic equipment from improper use.

A second misconception is that current medical radiographers will lose their jobs. This bill has no such consequence. Currently in the State of North Dakota, there are 154 clinics with 230 x-ray tubes and 58 hospitals with 330 x-ray tubes. Between these two groups, approximately 700 medical radiography licenses would be needed. We would expect that approximately 560 (80%) of those 700 licenses would be issued to registered Radiologic Technologists. The bill makes provisions for those non-RT's (approximately 20% of the total number of operators) currently operating x-ray equipment to continue to do so provided that those operators keep current in medical radiography through 12 hours of continuing education units per year. No one currently working in medical radiography will lose their job, as a medical radiographer as a consequence of this bill. A competent medical radiographer can affect the appearance of an image by setting the proper techniques, for example, making a film lighter or darker to improve the quality of a specific image. An expert in medical radiography can usually resolve exam quality issues without drastically increasing the radiation exposure to the patient by selecting the proper radiographic techniques. A poor choice of techniques, based upon an incomplete understanding of the art and the science of medical radiography can increase the patient's radiation exposure considerably.

We believe that this legislative area demands prompt and effective action. We urge this committee to support our recommendations. Thank you for time and attention.

Madam Chairman and members of the Human Services Committee, my name is Monica Chamley, Registered Technologist, holding certification in Radiation Therapy, I treat cancer patients. I am before you today representing the NDSRT.

I am concerned that in some rural areas there are three generations deep of non-registered technologists training non-registered technologist training non-registered technologist without ever-getting formal training or continuing education. In fact some people who are practicing have as little as 10 hours of clinical training. Registered technologists are required to complete approximately 27 hours per week of clinical training over a 24-month period while enrolled in x-ray school.

Do people without proper education in radiobiology realize the impact that ionizing radiation can have on an unborn fetus or at what point cell division is the most crucial or the impact ionizing radiation has on a young child's reproductive organs? These are all very logical arguments for why we need House Bill 1311 put into effect. If you look at a national level as a Registered Technologist in order to perform my job I have to complete 12 accredited hours of continuing education per year. How can you honestly argue that there is anything negative about requiring continuing education for anyone utilizing ionizing radiation for diagnostic purposes? We are talking about human lives here. I have heard concerned voices speak out regarding the small rural towns and the effects this would have on them and the cost to those clinics or hospitals.

Look at it from this angle, how much more it costs for the taxpayers when a tumor on a chest x-ray is missed because of under-exposure or "burnt out" because of over-exposure. On an abdomen x-ray upon viewing a completed exam an area of question is seen would

the non-registered technologist know the special view to perform to demonstrate the area in question or even how to look it up to find the information.

It is much more cost effective to treat a lung tumor when radiation alone or surgery alone can cure the patient. The hospital bill immediately goes up into the hundreds of thousands of dollars when the patient needs surgery, radiation and chemo therapy or as a combined treatment. Accurate diagnosis can simply be obtained by proper training of personnel utilizing ionizing radiation for diagnostic purposes. Time, distance and shielding has been drilled into our minds since we set foot into x-ray school. What if it was your child's reproductive organs that got damaged or your child that got radiation induced cancer at an early age because of too many over-exposed exams. What if your father or grandfather's life could have been spared because a chest x-ray missed a spot on their lung that turned up malignant? I think it is time that we focus on who this bill is going to save. Can you really put a dollar amount on a human beings life? A human is priceless and the dollar value just went up when someone you love is staring into the x-ray tube. Don't deny them the right to a quality exam. The people you love and care about deserve the knowledge and skill that a technologist has to offer.

Once again thank-you for your full attention.



Madam Chairman and members of the Human Services committee, my name is Shirley Koble. I represent the North Dakota State Society of Radiologic Technologists, a professional organization founded for the express purpose of enhancing the proper and safe delivery of medical radiological services through education. With me today are registered radiologic technologists and members of the NDSRT. We welcome the opportunity to appear before you today during these hearings and commend the North Dakota legislature for its attention to this very important subject.

We would like to take a few moments to show how education and minimum standards can benefit our rural and urban communities. You may not be aware that there are 630 registered technologists in the state of North Dakota according to the ARRT (the American Registry of Radiologic Technologists). There is currently no way to quantify the number of non-registered technologists currently taking medical radiographs; there are no controls on who performs the procedures nor is there a census of the practice. The goal of our Bill 1311 is to ensure that every person in the state of North Dakota receives the Quality Care they deserve. We have to remind ourselves as professionals that the most important focus of our career is to take care of our patient and to assure them that they are getting the best care possible. This falls under our professional code of ethics. In the absence of such a professional code, one wonders how to ensure optimal patient care for all. We've learned all too well from the past that voluntary standards have not been effective.

A relevant, recent example is the field of mammography. It is well understood that widespread mammographic screening has the potential to significantly reduce mortality from breast cancer. However, the effectiveness and success of such screening depends

on consistent, high quality mammographic images and to obtain those images at low doses of radiation. The American College of Radiology (ACR) established a voluntary mammography accreditation program in 1987 to help assure the reproducibility of high quality mammograms. Before MQSA (the Mammography Quality Standards Act of 1992) only 89% of facilities passed phantom image tests, which are used to assess the technical quality of mammograms in a facility. Today 98% of facilities pass this test. In 1992, 14 of the 40 North Dakota mammography sites providers were voluntarily accredited through the American College of Radiology. Today all 40 providers in the State have met and passed the mandatory accreditation standards set by the ACR. The FDA believes that MQSA has had a positive impact on the mammography quality, mammography radiation dose and breast cancer mortality. These encouraging outcomes are the result of the mandatory compliance standards. Among other things, those standards mandate that mammographers stay current in their field through continuing education specific to mammography. These mandatory standards happened because the public demanded this happen.

Properly calibrated equipment and well-educated radiologic technologists are primary elements in the safe delivery of this radiation.

We commend the North Dakota legislature for its interest and timely concern with respect to this important issue. The art and science of medical diagnostic radiography is best practiced by those with an appropriate preparation and understanding of that art and science. We believe that this legislative area demands prompt and effective action. We urge the North Dakota legislature to continue its effort to seek a sound legislative solution to this problem which we believe is essential to protect the rights of the people of North

Dakota to properly performed radiologic examinations and from the potential hazard of excessive and unnecessary radiation.

Again thank-you for your full attention and time.

## TESTIMONY IN SUPPORT OF HOUSE BILL No. 1311

By

Dana Mount

North Dakota Department of Health

701-328-5188

The North Dakota Department of Health would like to testify in support of House Bill No. 1311 with several amendments. In accordance with North Dakota Century Code Chapters 23-20 and 23-20.1, the Department of Health is charged with developing regulations to allow for the beneficial use of ionizing radiation while ensuring the adequate protection of public health and safety. The department carries out this responsibility by establishing standards for use, storage and handling of ionizing radiation sources; by licensing, registering and inspecting facilities that use ionizing radiation; and by requiring minimum levels of training and competence for radiologic technologists as defined in this bill.

One of the best ways to ensure the beneficial use of ionizing radiation and one of the areas we find to be most deficient is the area of technologist training and competence, especially in the x-ray area. Studies as well as the experience of our own inspectors has shown that lack of training and competence routinely results in poor image quality, the necessity for repeat procedures and increased exposure techniques. These problems result in radiation exposure to humans without a reasonable expectation of benefit.

While the Department has regulations requiring technologist training, we find this an extremely difficult area to verify and enforce. Passage of House Bill No.1311 would greatly assist the Department by providing for a verifiable, quantifiable training requirement for technologists.

There are several provisions in the bill as proposed that the Department would like to see amended. These are as follows:

1. In Section 2, page 2, near the end of line 25 and beginning of line 26, the words, 'or any other form of radiant energy' should be deleted. This wording is too broad and could be construed to include emissions from devices such as heat lamps and tanning beds.
2. In Section 9, page 5, line 10, the words, 'radiant energy' should be replaced with the words, 'ionizing radiation' for the same reason.
3. In Section 4, page 4, after the end of the sentence in line 6, add the words, 'These standards shall be no less stringent than, nor in conflict with ionizing radiation operator training requirements promulgated in accordance North Dakota Century Code Chapters 23-20 and 23-20.1.' This will prevent the new licensing board from issuing a license to an individual who is not in compliance with the North Dakota Radiological Health Rules.

Secondly, the language in HB 1311 referring to dental professionals is not consistent with current dental terminology and the North Dakota dental statutes, nor does it clearly exclude dental professionals from this bill as it is intended to. In the field of dentistry all individuals who take radiographs including qualified dental assistants, registered dental assistants, licensed dental hygienists, and dentists are regulated by the State Board of Dental Examiners. Dental hygienists and dentists are licensed professionals who complete courses in dental radiology as part of their formal training. Both qualified and registered dental assistants must pass competency exams approved by the

State Board of Dental Examiners in order to take dental radiographs. Therefore, the Department agrees they should be exempted from this Bill.

Since existing statues already define who can take dental radiographs, the definition of dental radiographer is confusing. In dentistry, to my knowledge, there are no staff whose duties are restricted solely to radiography of the maxilla and mandible. The current definition leads us to believe there are such positions in the dental field. Qualified and registered dental assistants can take radiographs of the head and neck areas related to dentistry as well as to provide a variety of other services based on their level of training. Dental professionals not only take radiographs of the maxilla and mandible, but also of the temporomandibular joint area as well as cephalograms for orthodontic purposes. We recommend the following changes be made to clarify the language and provide consistency with current dental statues, rules, and regulations.

4. In Section 1, Page 1, lines 6 through 8, change the entire proposed definition of dental radiographer to read: "Dental radiographer" means a qualified or registered dental assistant or licensed dental hygienist whose duties include radiography of the head and neck area for a diagnostic purpose.' The definition as proposed is in conflict with existing statues which already define who can take dental radiographs, and they are not restricted solely to radiography of the maxilla and mandible
5. In Section 1, Page 2, line 16, delete the word, 'dental'. The proposed definition of "restricted license" leads one to believe that the radiology technology board of examiners can issue restricted licenses to individuals to take dental radiographs. This could create another level of dental professional who is not regulated by the Board of Dental Examiners.
6. In Section 2, Page 3, line 8, add the words, 'dental assisting' after the words, 'dental hygiene'. In North Dakota there are dental hygiene and dental assisting programs at the North Dakota State College of Science in Wahpeton. The current language would place the dental assisting program in violation of this statute.
7. In Section 2, Page 3, line 12, add the words, 'registered, or classified as qualified dental assistant' after the word, 'licensed', to include these individuals in the exemption. Also in line 13, replace the word, 'examination' with, 'service'. These changes are needed to remain consistent with current dental statues, rules, and regulations.
8. In Section 2, Page 3, line 15, add the words, ' or licensed dentist after the word, 'radiologist', since there may be dental assistants who are not classified as qualified or registered who perform only darkroom procedures under the supervision of a dentist.

The Department further recommends that the Committee confer with the Board of Dental Examiners to ensure that there is no other language in this Bill which conflicts with their requirements.

Finally, the Department recommends that the Board be made of seven members rather than eight to provide an odd number.

In conclusion, the Department supports the passage of House Bill No.1311 with the above amendments. I have attached the proposed amendments in proper form for submission to the Legislative Council.

This concludes the Department's testimony in support of House Bill No.1311. I will be happy to answer any questions you may have. Ken Wangler, Manager of the Radiation Control Program and Kathleen Mangskau, Director of the Oral Health Program are here to answer any specific questions you may have concerning these changes. Thank You.



North Dakota Healthcare Association

**Vision**

*The North Dakota Healthcare Association will take an active leadership role in major healthcare issues.*

**Mission**

*The North Dakota Healthcare Association exists to advance the health status of persons served by the membership.*

## House Bill 1311

Madam Chairman, members of the House Health and Human Services Committee, my name is Arnold Thomas. I am the President of the North Dakota Healthcare Association.

I commend the sponsors of House Bill No. 1311 for proposing a measure that seeks to set high standards for radiology services. Our member hospitals share their emphasis and encourage their commitment. We have a great deal of respect for the training and experience that a registered technologist receives and our hospitals make every effort for their recruitment and retention.

Some of our facilities, however, have found it difficult or impossible to recruit such graduates and others, especially the smaller facilities, simply don't have the quantity of work available to offer graduates.

Recognizing these facts, those facilities have had to take special measures to ensure quality care in the area of radiology services. Cross training has been one way of dealing with this. We take multiple functions and combine them to create one job. We have individuals who run our hospital labs and we've provided them with training to perform radiological functions. In other instances, we have employed a radiological technologist to supervise others who have been trained to perform the services but who are not in and of themselves registered radiological technologists. In some situations the registered technologist and those being supervised are in different locations.

Safety and supervision of the radiological service and its personnel is exercised through the consulting radiologist, the local attending physician, state and federal equipment monitoring and maintenance surveys, ongoing peer review processes, and the hospitals own performance evaluations for undesirable variations in x-ray quantity and quality.

On top of this, when we have our licensure surveys, we bear the burden of demonstrating that our people are duly trained and competent to operate the equipment and perform the procedures assigned. Failure to meet the standards can result in anything from monetary penalties to loss of licensure.

The ultimate check on service quality and safe equipment use is the doctor as he or she is ultimately responsible for the patient. The doctor expects and in fact demands clear, accurate pictures. He or she doesn't want to wait for retakes when a diagnosis is needed, and he or she most certainly doesn't want any harm to come to a patient or the person performing the procedure from inappropriately taken x-rays.

These are very high standards that we already have to and do meet.

So, while we support the intent of the bill we would like to propose an amendment to exempt hospitals and the facilities in which they have an ownership or managerial interest. As I said, the high standards our facilities already have to meet address the quality issues at play in this bill. This amendment would simply ensure that hospitals continue to have the flexibility to train and utilize their personnel in the manner that best allows them to meet the medical needs of our citizens.





#### Vision

*The North Dakota Healthcare Association will take an active leadership role in major healthcare issues.*

#### Mission

*The North Dakota Healthcare Association exists to advance the health status of persons served by the membership.*

## Definitions

**Credentialing:** the process of regulating health professions by means of registration, certification or licensure

- **Certificate:** a voluntary process by which a statutory regulatory entity grants recognition to an individual who has met certain prerequisite qualifications specified by the regulatory entity and who may assume or use the word “certified” in the title or designation to perform prescribed health professional tasks.
- **Licensure:** the permission to engage in a profession that would otherwise be unlawful in this state in the absence of that permission and is granted to individuals who meet prerequisite qualifications and allows them to perform prescribed professional tasks and use a particular title.
- **Registration:** the formal notification that, before rendering services, a practitioner submits to a state agency setting forth the name and address of the practitioner, the location, nature, and operation of the health activity to be practiced, and such other information required by the regulatory entity. A registered practitioner may be subject to discipline and standards of professional conduct established by the regulatory entity but may not be required to meet any test of education, experience, or training in order to render services.



January 14, 1999

The Honorable Francis J. Wald  
North Dakota House of Representatives  
State Capitol, 600 East Boulevard  
Bismarck, ND 58505-0360

Dear Representative Wald:

The American Society of Radiologic Technologists, representing more than 75,000 medical imaging professionals nationally including 257 in North Dakota, is pleased to hear of your proposed bill HB 1311 before the North Dakota Legislative Assembly.

The Society's goals are educating the medical community and the public about the benefits and risks of radiologic and other diagnostic medical procedures while providing safe, effective examinations and treatments to patients. ASRT firmly believes that personnel performing diagnostic and therapeutic procedures on patients must be required to demonstrate competence through education and certification.

ASRT has pursued these goals by supporting the Consumer-Patient Radiation Health and Safety Act of 1981, which established basic certification and education guidelines for personnel who perform radiologic procedures. However there was no enforcement provision in this act, leaving the adoption of certification and education standards to the discretion of each state. To date, only 33 states have enacted licensure or certification laws and the regulations vary widely from state to state. Hopefully North Dakota will be the 34<sup>th</sup> state to enact a law that guarantees that all members of the public—young, old, male and female—receive safe and high-quality images for all radiologic examinations and treatments.

We fully support the legislation initiated by the North Dakota Society of Radiologic Technologists in their effort to ensure that the citizens of North Dakota receive safe, effective and high quality radiologic patient care.

Sincerely,

A handwritten signature in cursive script that reads "DuVonne Campbell".

DuVonne Campbell  
Director of Government Relations

A handwritten signature in cursive script that reads "Christine Lung Morrison".

Christine Lung Morrison  
Government Liaison



WAYNE A. MATTERN, D.D.S.

1714 N. Ninth Street  
Bismarck, ND 58501-1837  
Fax: (701) 224-0038  
Telephone: (701) 223-1474

Madam Chairman and members of the committee, my name is Wayne Mattern and I am a private general dentist from Bismarck. I am speaking on my own behalf, although I currently serve as the Executive Director of the ND Board of Dental Examiners. (Our Board was not consulted nor has it had time to review House Bill #1311 at a meeting.)

Some of the language in HB 1311 referring to dental professionals is not consistent with current dental terminology and the North Dakota dental statutes. In the field of dentistry, all individuals who take radiographs, including registered dental assistants, qualified dental assistants, dental hygienists and dentists, are regulated by the State Board of Dental Examiners. Dentists and dental hygienists are licensed practitioners who complete courses in dental radiology as part of their formal training. Both registered and qualified dental assistants must pass competency exams approved by the State Board of Dental Examiners in order to take dental radiographs. All dental professionals who take dental radiographs are already regulated by the State Board of Dental Examiners, therefore, I agree with the bill's sponsors that they should be exempted.

Since existing statutes and/or rules already define who can take dental radiographs, the definition of dental radiographer is confusing. In dentistry, to my knowledge, there is no one whose duties are restricted solely to radiography of the maxilla and mandible. The current definition leads us to

believe there are such positions in the dental field. Qualified and registered dental assistants can take radiographs of the head and neck areas related to dentistry as well as to provide a variety of other services based on their level of training. Dental professionals not only take radiographs of the maxilla and mandible, but also of the temporomandibular joint area as well as the cephalograms for orthodontic purposes. As a starting point, I recommend the following changes be made to clarify the language and provide consistency with current dental statutes and regulations.

Page 1

Amend Section 1, No. 2, lines 6-8 to read: “Dental radiographer” means a qualified or registered dental assistant whose duties include radiography of the head and neck area for a diagnostic purpose.

Registered dental hygienists are licensed practitioners. Amend Section 1, No. 5, line 17: After the word dentistry, insert the words “dental hygiene”.

Page 2

All dental professionals who take radiographs are already regulated by the State Board of Dental Examiners. The definition of “restricted license” leads one to believe that the radiology technology board of examiners can issue restricted licenses to individuals to take dental radiographs. This could create another level of dental professional who is not regulated by the Board of Dental Examiners. Amend Section 1, No. 13, line 16 by deleting the word “dental”.

Page 3

In North Dakota, there are dental hygiene and dental assisting programs at the North Dakota State College of Science in Wahpeton. The current language would possibly place the dental assisting program in violation of this statute. Amend Section 2, No. 4a, line 8 by adding the words “dental assisting” after the phrase dental hygiene.

To clarify who is exempted from this statute and to be consistent with current dental statutes, rules and regulations, the sentence exempting currently regulated dental professionals should be revised. Amend Section 2, No 4b, lines 12-13 to read: “An individual licensed, registered, or classified as a qualified dental assistant by the Board of Dental Examiners who is administering an x-ray service related to the practice of dentistry.”

There may be dental assistants who are not classified as qualified or registered who perform only a darkroom procedure. These individuals are under the supervision of a licensed dentist. Amend Section 2, No 4c, line 15 to read: “supervision of a licensed radiologic technologist, radiologist or licensed dentist...”

Madam Chairman, this completes my formal testimony. I would be happy to answer any questions you or any members of the committee may have regarding the dental portions of this bill.

January 17, 1999

North Dakota House of Representatives  
Fifty-sixth Legislative Assembly of North Dakota

Dear Representatives Wald, Stefonowicz, Porter, Gunter, Senators Kilzer, Lee and North Dakota House of Representatives ,

The North Dakota Dental Hygienists' Association (NDDHA) would like to amend House Bill No. 1311. Some of the descriptions in this bill are inaccurate and in conflict with the North Dakota Board of Dental Examiners rules and regulations.

**Page 1 line 6** The NDBODE does not recognize a Dental Radiographer. This definition should be deleted and replaced by, "Registered or Qualified Dental Assistant", means an individual, other than a licensed practitioner, whose duties are restricted to radiography of the head and neck region for a diagnostic purpose.

**Page 1 lines 16-17** The NDBODE licenses Dental Hygienists so on **line 17** after dentist, dental hygienist should be added.

**Page 1 line 23** Delete dental radiographer and insert Registered or Qualified Dental Assistant.

**Page 2 line 16** Delete the word dental and insert head and neck.

**Page 2 lines 27-28** Delete the word dental radiographer and insert Registered or Qualified Dental Assistant.

**Page 3 line 4** Delete the word dental radiographer and insert Registered or Qualified Dental Assistant.

**Page 3 line 8** After Dental hygiene, insert Dental Assistant.

**Page 3 lines 12-13** This should be deleted and restated as, b. An individual licensed, registered or classified as qualified by the North Dakota Board of Dental Examiners.

We feel that it might be easier to delete all reference to dental, and change **Page 3 lines 8, 12,13** as stated above.

As NDDHA Legislative Chair I would like to suggest contacting the NDBODE for clarification.

Thank you for your time.

Respectfully,

Renee Daucsavage RDH  
President Elect and Legislative Chair  
NDDHA