HB
150

HFIN
FILE

IOUSE COMMITTEE REPO'

(11)
Date Referred to Committee: February 6, 2006 — FURTHER REFERRALS:

Date of Committee Action: 2-22-06

The FINANCE Committee considered: HB 150

HOUSE BILL NO. 150 — LICENSING RADIOLOGIC TECHNICIANS

"An Act requiring licensure of occupations relating to radiologic technology, radiation therapy, and nuclear medicine technology; and providing for an effective date."

Recommends it be replaced with [ ] HCS or [✓] CS for HB 150 (FIN)
For Senate Bills with new title: [ ] Technical Title [ ] New Title: HCR______ [✓] Same Title [ ] New Title

[ ] attach amendments
[ ] add new referral to ____________Committee
[ ] Letter of Intent____________Committee

List of Abbrev for Depts.:
ADM
CED
COR
CRT
EED
DEC
DFG
GOV
HSS
LEG
LAW
LWF
MVA
DNR
DPS
REV
DOT
UA

NEW FISCAL NOTES (*Assigned by Chief Clerk's Office)

List by Dept(s):	*FN#	Fiscal	Indet.	Zero
CED		✓		

PREVIOUS FISCAL NOTES

List by Dept(s):	FN#	Fiscal	Indet.	Zero

Signing with recommendations	Printed Last Name	DP	DNP	NR	AM
[signature]	Hawker			X	
[signature]	Weyhrauch				X
[signature]	Foster	X			
[signature]	Stoltze			X	
[signature]	Stoltze			✓	
[signature]	Kerttula			✓	
[signature]	Joule			✓	
Chair: [signature]	Chenault	X			
Chair: [signature]	Meyer			X	

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: CSHB 150(FIN)
() Publish Date:

Revision Date/Time (Note if correction):
Title: Licensing Radiological Technicians
Sponsor: Anderson
Requester: Finance

Dept. Affected:
RDU: Corp. Bus & Prof Licensing (117)
Component: Corp. Bus & Prof Licensing
Component No. 2360

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Personal Services	28.7	28.7	28.7	28.7	28.7	28.7
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	6.0	6.0	6.0	6.0	6.0	6.0
Supplies	1.0	1.0	1.0	1.0	1.0	1.0
Equipment	6.0	0.0	0.0	0.0	0.0	0.0
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	41.7	35.7	35.7	35.7	35.7	35.7
CAPITAL EXPENDITURES						
CHANGE IN REVENUES (1156)	77.4	0.0	71.4	0.0	71.4	0.0

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
1156 Receipt Supported Services	41.7	35.7	35.7	35.7	35.7	35.7
TOTAL	41.7	35.7	35.7	35.7	35.7	35.7

Estimate of any current year (FY2006) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2007 budget proposal: [ ]

POSITIONS

Full-time						
Part-time	1	1	1	1	1	1
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

This legislation establishes licensure for occupations relating to radiological technology. The division was advised that approximately 380 to 400 individuals will seek licensure under this bill. This fiscal note is based on the assumption there will be at least 400 licensees.

An explanation of the costs shown above is attached.

Prepared by: Jennifer Strickler, Chief
Division: Corporations and Licensing
Phone: (907) 465-2144
Date/Time: 2/24/06 11:57 AM

Approved by: William C Noll, Commissioner
Agency: Commerce, Community and Economic Development
Date: 2/24/2006

(Revised 9/7/2005 OMB)

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

BILL NO. CSHB 150(FIN)

ANALYSIS CONTINUATION

CSHB 150(FIN): An Act requiring licensure of occupations relating to radiological technology, ...

Total PERSONAL SERVICES: $28.7

- Occupational Licensing Examiner position, PPT, Range 13

This fiscal note provides funding for half of an Occupational Licensing Examiner position to provide support to this licensing program. This fiscal note identifies funding for half of a position and a corresponding position count.

Total TRAVEL: $0

Total CONTRACTUAL SERVICES: $6.0

- Printing, postage, communication, and advertising costs, $3.0
- Regulations-related costs to establish education criteria and standards, and other requirements; including AAG time, $3.0

Information has been received that licensure examinations are available from The American Registry of Radiological Technologists. The division will seek to make arrangements with this organization for use of the licensing examinations.

Total SUPPLIES: $1.0

To fund daily operating supplies of the program.

Total EQUIPMENT (one-time costs): $6.0

TOTAL FISCAL NOTE: $41.7

REVENUE: Revenue will be generated by individuals who seek license under this bill. Based on 400 licensees, each licensee can be expected to pay direct costs of approximately $194.00 ($77.4 biennial costs divided by 400); in addition to indirect costs of approximately $100.00 per person, for an approximate initial licensing fee of $294.00 biennially. Licensing fees will be adjusted at the first renewal based on actual costs and actual numbers of licensees.

2/22/06
adopted N/U

24-LS0470\B
Mischel
2/20/06

O # New 1

CS FOR HOUSE BILL NO. 150( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-FOURTH LEGISLATURE - SECOND SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVE ANDERSON

A BILL

FOR AN ACT ENTITLED

1 **"An Act requiring licensure of occupations relating to radiologic technology, radiation**
2 **therapy, and nuclear medicine technology; and providing for an effective date."**

3 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

4 *** Section 1.** AS 08.01.010 is amended by adding a new paragraph to read:
5 (39) regulation of radiographers under AS 08.89.
6 *** Sec. 2.** AS 08 is amended by adding a new chapter to read:
7 **Chapter 89. Radiographers.**
8 **Article 1. Licensing Requirements.**
9 **Sec. 08.89.100. Unlicensed practice prohibited.** (a) Except as provided in (b)
10 of this section, a person may not knowingly
11 (1) use radioactive materials or equipment emitting radiation on a
12 human for diagnostic or therapeutic purposes without a license or permit issued under
13 this chapter that authorizes the person to do so; or
14 (2) employ another to use radioactive materials or equipment emitting

1 radiation on a human for diagnostic or therapeutic purposes unless the employee has
2 an appropriate license or permit issued under this chapter.
3 (b) The licensing or permit requirement in (a) of this section does not apply to
4 a person who is
5 (1) a licensed practitioner;
6 (2) a dental assistant who uses equipment emitting radiation on
7 humans under the supervision of a licensed practitioner;
8 (3) licensed under another provision of state law if the license
9 authorizes the person to use radioactive materials or equipment emitting radiation on a
10 human for diagnostic or therapeutic purposes;
11 (4) a student enrolled in and attending a school or college of medicine,
12 osteopathy, dentistry, dental hygiene, chiropractic, podiatry, radiologic technology,
13 radiation therapy, or nuclear medicine, while, as part of course work in the school or
14 college, the student uses radioactive materials or equipment emitting radiation on
15 humans under
16 (A) the direct supervision of a licensed practitioner; or
17 (B) the direct supervision of a person fully licensed under this
18 chapter as a radiographer, radiation therapist, or nuclear medicine technologist,
19 as appropriate to the course;
20 (5) in the regular medical service of the armed services of the United
21 States or the United States Public Health Service while in the discharge of the person's
22 official duties; or
23 (6) in the regular medical service of the United States Public Health
24 Service or the armed services of the United States volunteering services without pay or
25 other remuneration to a hospital, clinic, medical office, or other medical facility in the
26 state.
27 (c) In this section, "under the direct supervision" includes the amount of
28 supervision needed to ensure that an examination or test conducted is performed safely
29 and appropriately.
30 (d) Violation of this section is a class A misdemeanor.
31 **Sec. 08.89.110. Use of title prohibited.** (a) Unless a person holds the

1 corresponding full or limited certificate of licensure or permit issued under this
2 chapter or proof of certification by the American Registry of Radiologic Technologists
3 or the Nuclear Medicine Technology Certification Board, a person may not use
4 (1) the title "radiographer," "radiation therapist," "nuclear medicine
5 technologist," "limited radiologic imager," "temporary permitted radiographer,"
6 "temporary permitted radiation therapist," "temporary permitted nuclear medicine
7 technologist," or "temporary permitted limited radiologic imager";
8 (2) an abbreviation that corresponds to a title listed in (1) of this
9 subsection; or
10 (3) another title, abbreviation, letters, figures, signs, or other devices
11 that would lead a reasonable person to believe that the person is licensed or permitted
12 under this chapter.
13 (b) Violation of this section is a class A misdemeanor.
14 **Sec. 08.89.120. Qualifications for full certificate licensure.** (a) In order to
15 receive a full certificate of licensure under this chapter, a person must apply to the
16 department in a manner that indicates whether the person is applying to practice as a
17 radiographer, radiation therapist, or nuclear medicine technologist. In addition, the
18 person shall
19 (1) be at least 18 years of age;
20 (2) have graduated from secondary school or have passed an approved
21 equivalency test;
22 (3) have graduated from a program approved by the department under
23 AS 08.89.130 in the area of practice for which the person seeks licensure;
24 (4) have met the examination requirement under AS 08.89.140 for the
25 area of practice for which the person seeks licensure; and
26 (5) pay the required fees.
27 (b) A full certificate shall specify the area of practice authorized under it.
28 (c) A person with a full certificate of licensure may practice in the authorized
29 area of practice only under the direction of a licensed practitioner.
30 **Sec. 08.89.130. Program approval; full certificates.** (a) The department
31 shall, upon application by a program, evaluate an educational program that trains

New Text Underlined [DELETED TEXT BRACKETED]

1 persons to receive full certificates of licensure under this chapter and approve or
2 disapprove the program according to the criteria in (b) of this section.
3 (b) The department shall approve a program evaluated under this section only
4 if
5 (1) the program is affiliated with at least one hospital that provides a
6 clinical component for the program that is considered to be adequate by the
7 department;
8 (2) the program's curriculum for each course of study in the areas of
9 practice licensed under AS 08.89.120 meets the standards approved by the Joint
10 Review Committee on Education in Radiologic Technology, the Joint Review
11 Committee on Educational Programs in Nuclear Medicine Technology, the United
12 States Department of Education, or another appropriate accreditation agency whose
13 standards are considered equivalent by the department; and
14 (3) a recognized national voluntary accrediting organization has
15 reviewed the program's application to the department and submitted the review
16 comments to the department.
17 **Sec. 08.89.140. Examinations; full certificates.** The examination requirement
18 under AS 08.89.120 may be met by meeting one of the following criteria:
19 (1) successfully passing an examination approved by the department in
20 the area of practice for which the full certificate of licensure is sought;
21 (2) proof of current certification by the American Registry of
22 Radiologic Technologists, Nuclear Medicine Technology Certification Board; or
23 (3) proof of current licensure in the area of practice for which a full
24 certificate of licensure is sought by another jurisdiction with standards for licensure
25 considered by the department to be equivalent to the standards of this state.
26 **Sec. 08.89.150. Qualifications for limited radiologic imager.** (a) In order to
27 be licensed as a limited radiologic imager, a person must
28 (1) be at least 18 years of age;
29 (2) have graduated from secondary school or have passed an approved
30 equivalency test;
31 (3) have graduated from a program approved by the department under

1 AS 08.89.160 or have not less than two years of clinical experience in limited
2 diagnostic radiologic imaging under the supervision of a fully licensed radiographer or
3 a licensed practitioner;
4 (4) have passed the exam approved by the department for limited
5 radiologic imager licensure; and
6 (5) pay the required fees.
7 (b) A limited radiologic imager
8 (1) may perform limited radiologic diagnostic imaging only under the
9 supervision of a fully licensed radiographer or a licensed practitioner;
10 (2) may perform only radiography of the chest, abdomen, and axial-
11 appendicular skeleton;
12 (3) may not perform radiologic procedures involving the use of
13 contrast media, use of fluoroscopic equipment, mammography, tomography, magnetic
14 resonance imaging (MRI), bone densitometry using ionizing radiation, nuclear
15 medicine, radiation therapy, or computed tomography imaging (CT scan).
16 **Sec. 08.89.160. Program approval for limited radiologic imager.** (a) The
17 department shall, upon application by a program, evaluate a program that trains
18 persons to be limited radiologic imagers and approve or disapprove the program
19 according to the criteria in (b) of this section.
20 (b) The department shall approve a program evaluated under this section if the
21 program includes didactic instruction and clinical instruction considered adequate by
22 the department in axial-appendicular skeleton radiography, chest and abdomen
23 radiography, equipment maintenance and operation, radiation safety and protection,
24 image production and evaluation, radiographic anatomy and positioning procedures,
25 and applicable federal and state requirements relating to patient care and safety or if
26 the program is instructed by and under the supervision of a fully licensed radiographer
27 or licensed practitioner and sponsored by a medical facility, as defined in
28 AS 18.26.900; in this subsection, "clinical instruction" means hands-on experience in
29 a health facility setting, such as in a hospital or clinic, under the supervision of a
30 licensed practitioner or fully licensed radiographer.
31 **Sec. 08.89.165. Examination; limited radiologic imagers.** (a) The

1 department shall provide for an examination for qualification for licensure of a limited
2 radiologic imager under AS 08.89.150. The examination must be offered at regular
3 intervals to provide maximum access and sufficient opportunity for interested
4 applicants.
5 (b) The examination provided under this section must be based in whole or in
6 part on a limited scope of practice in radiography examination designed by the
7 American Registry of Radiologic Technologists, and shall be designed by the
8 department in consultation with the Department of Health and Social Services, the
9 state Medical Board, the Alaska Society of Radiologic Technologists, and at least one
10 member of the American College of Radiology who resides in the state.
11 (c) A passing score on an examination taken under this section is 75 percent as
12 a general average rating.
13 **Sec. 08.89.170. Temporary permit.** (a) The department may issue a
14 nonrenewable temporary
15 (1) limited permit to a person authorizing practice in an area
16 corresponding to the person's scope of radiology training if the person
17 (A) is enrolled in a program for that area approved under
18 AS 08.89.160; and
19 (B) pays the appropriate fee; or
20 (2) full permit to a person authorizing practice in an area
21 corresponding to the person's scope of radiology training if the person
22 (A) has taken an examination described under AS 08.89.140 or
23 08.89.150 for that area and the results are not yet available;
24 (B) applies for the temporary permit within one year after
25 completing a program approved under AS 08.89.130; and
26 (C) pays the appropriate fee.
27 (b) A temporary permit issued under this section must indicate the area of
28 practice authorized. Except as provided in (c) of this section, the permit expires two
29 years after the date of issuance of the permit.
30 (c) Notwithstanding (a) and (b) of this section, if an applicant has provided
31 proof of certification by a recognized national credentialing body that covers the area

1 of practice for which a certificate of licensure is sought, the department may issue a
2 nonrenewable temporary permit valid for a period of one year to the applicant upon
3 payment of a fee determined by the department.
4 (d) A person who holds a permit under this section is entitled to use the title
5 "temporary permitted radiographer," "temporary permitted radiation therapist,"
6 "temporary permitted nuclear medicine technologist," or "temporary permitted limited
7 radiologic imager."
8 **Sec. 08.89.180. License renewal; continuing education.** (a) The department
9 may not renew a full certificate of licensure issued under this chapter unless the
10 licensee pays the required fee and submits evidence satisfactory to the department that
11 the person has met the applicable continuing education requirements as determined by
12 the department.
13 (b) A person with a full certificate of licensure who is licensed to practice in
14 more than one area of practice is not required to complete more continuing education
15 than a person with a full certificate of licensure who is licensed in only one area of
16 practice. However, the department, in its communications with persons who have a
17 full certificate of licensure in more than one area of practice, shall encourage those
18 persons to receive continuing education in all of the areas for which they are licensed.
19 (c) The department may not renew a limited radiological imager license issued
20 under this chapter unless the licensee pays the required fee and submits evidence
21 satisfactory to the department that the person has met the applicable continuing
22 competency requirements as determined by the department.
23 **Sec. 08.89.190. License or permit to be kept on file.** A person licensed or
24 holding a permit under this chapter shall keep on file at each place of the person's
25 employment the license or permit document issued under this chapter or a verified
26 copy of the license or permit document.
27 **Sec. 08.89.200. Notification of address changes.** A licensee or permittee
28 under this chapter shall notify the department in writing within 30 days after a name or
29 address change.
30 **Sec. 08.89.210. Reapplication after revocation.** A person whose license or
31 permit is revoked by the department for a reason other than nonpayment of fees may

1 not apply to be licensed under this chapter until one year has elapsed from the date of
2 revocation. The department may require an examination for reinstatement.
3 **Sec. 08.89.220. Fees.** The department shall set fees under AS 08.01.065 for
4 each of the following:
5 (1) application;
6 (2) examination;
7 (3) full certificate of licensure;
8 (4) limited certificate of licensure;
9 (5) temporary full permit;
10 (6) temporary limited permit;
11 (7) license renewal;
12 (8) adding an area of practice to an existing license;
13 (9) program approval under AS 08.89.130.
14 **Article 2. Prohibitions; Penalties; Disciplinary Sanctions.**
15 **Sec. 08.89.300. Prescription required.** (a) A person holding a license or
16 permit issued under this chapter may not knowingly use a radioactive substance or
17 equipment for radiologic procedures on a human for diagnostic or therapeutic
18 purposes except as prescribed by a licensed practitioner.
19 (b) Violation of this section is a class A misdemeanor.
20 **Sec. 08.89.310. Civil penalty for unlicensed practice.** A person required to
21 be licensed or to have a permit under this chapter who engages or offers to engage in a
22 type of diagnostic radiologic imaging, radiation therapy, or nuclear medicine
23 technology for which the person is not licensed or for which the person does not hold
24 a permit may be fined up to $5,000 under the citation procedures of AS 08.01.102 -
25 08.01.104.
26 **Sec. 08.89.320. Criminal penalty for certain fraudulent practices.** A person
27 who obtains or attempts to obtain a license or permit under this chapter by dishonest or
28 fraudulent means or who knowingly forges, counterfeits, or fraudulently alters a
29 license or permit issued under this chapter is guilty of a class B misdemeanor.
30 **Sec. 08.89.330. Grounds for disciplinary sanctions or denial of license.** The
31 department may impose a disciplinary sanction authorized under AS 08.89.340 on a

1 person licensed or holding a permit under this chapter or refuse to issue or renew a
2 license or permit if the department finds that the person

3 (1) used fraud or deceit in the procurement or holding of the license or
4 permit or in the application process for the license or permit;

5 (2) has been convicted of a felony in a court of competent jurisdiction,
6 either within or outside of this state, unless the conviction has been reversed and the
7 person has been discharged or acquitted, or unless the person has been pardoned with
8 full restoration of civil rights;

9 (3) is or has been afflicted with a medical problem, disability, or
10 addiction that, in the opinion of the department, impairs professional competence;

11 (4) has aided a person who is not licensed or permitted under this
12 chapter, or otherwise authorized to perform the duties of a licensee or permittee, to
13 perform diagnostic radiologic imaging, radiation therapy, or nuclear medicine
14 technology;

15 (5) has undertaken or engaged in a radiologic technology practice
16 beyond the scope of duties permitted by law;

17 (6) has, under an assumed name, impersonated a person licensed or
18 formerly licensed under this chapter or is performing duties of a fully certificated
19 licensee, a limited certificate licensee, or a person holding a permit;

20 (7) is a licensee or permittee under this chapter and has violated the
21 code of ethics established by the department;

22 (8) has interpreted a diagnostic image for a clinician, a patient, the
23 patient's family, or the public;

24 (9) is a licensee or permittee under this chapter and is or has been
25 incompetent or negligent in performance of the licensee's or permittee's duties.

26 **Sec. 08.89.340. Disciplinary sanctions.** (a) When it finds that a person
27 licensed or holding a permit under this chapter has committed an act listed in
28 AS 08.89.330, the department may impose the following sanctions singly or in
29 combination:

30 (1) permanently revoke a license to practice;

31 (2) suspend a license for a determinate period of time;

1 (3) censure a licensee;
2 (4) issue a letter of reprimand;
3 (5) place a licensee on probationary status and require the licensee to
4 (A) report regularly to the department on matters involving the
5 basis of probation;
6 (B) limit practice to those areas prescribed;
7 (C) continue professional education until a satisfactory degree
8 of skill has been attained in those areas determined by the department to need
9 improvement;
10 (6) impose limitations or conditions on the practice of a licensee.
11 (b) The department may withdraw a limitation, condition, or probationary
12 status if it finds that the deficiency that required the sanction has been remedied.
13 (c) The department may summarily suspend a license before final hearing or
14 during the appeals process if the department finds that the licensee poses a clear and
15 immediate danger to the public welfare and safety. A person is entitled to a hearing
16 conducted by the office of administrative hearings under AS 44.64.010 within seven
17 days after the suspension order is issued. A person may appeal an adverse decision
18 after hearing to the superior court.
19 (d) The department may reinstate a license that has been suspended or revoked
20 if the department finds after a hearing that the person is able to practice with
21 reasonable skill and safety.
22 **Article 3. General Provisions.**
23 **Sec. 08.89.900. Unified occupation for fee purposes.** For purposes of
24 AS 08.01.065, all persons licensed or holding a permit under this chapter are
25 considered to be engaged in the same occupation.
26 **Sec. 08.89.910. Regulations.** The department shall adopt regulations necessary
27 to implement this chapter.
28 **Sec. 08.89.990. Definitions.** In this chapter,
29 (1) "axial-appendicular skeleton" means the skull, including the
30 mandible, sinuses, and facial bones; spine, including cervical, thoracic, lumbar,
31 sacrum, and coccyx areas; pelvis; ribs; and upper and lower extremities;

1 (2) "contrast media" means an examination where contrast media is
2 introduced into a human body to define a part or parts not normally visualized on a
3 radiograph;
4 (3) "department" means the Department of Commerce, Community,
5 and Economic Development;
6 (4) "diagnostic radiologic imaging" means the making of film records
7 or digital records by passage of radiation through the body to act on specially
8 sensitized film or digital sensors;
9 (5) "direct supervision" means in the physical presence of a person
10 who assists, evaluates, and approves the performance of tasks;
11 (6) "knowingly" has the meaning given in AS 11.81.900(a);
12 (7) "licensed practitioner" means a physician, physician assistant,
13 nurse practitioner, podiatrist, osteopath, dentist, or chiropractor who is either licensed
14 in this state or, if practicing as a physician, podiatrist, or osteopath, is exempt from
15 licensure under AS 08.64.370(1) or (4);
16 (8) "limited radiologic imager" means a person licensed under
17 AS 08.89.150 to perform diagnostic radiologic imaging within the limits specified in
18 AS 08.89.150(b);
19 (9) "nuclear medicine technologist" means a person who prepares,
20 calibrates, and administers radiopharmaceutical agents to humans for diagnostic or
21 therapeutic purposes;
22 (10) "radiation therapist" means a person who applies radiation to
23 humans for therapeutic purposes;
24 (11) "radiographer" means a person who uses radiation on humans for
25 diagnostic purposes.
26 * Sec. 3. The uncodified law of the State of Alaska is amended by adding a new section to
27 read:
28 REGULATIONS. The Department of Commerce, Community, and Economic
29 Development may begin the process to adopt regulations to implement this Act. The
30 regulations take effect under AS 44.62 (Administrative Procedure Act) but not before the
31 effective date of the statutes implemented by the regulations.

1 * **Sec. 4.** Except as provided in secs. 5 and 6 of this Act, this Act takes effect July 1, 2006.
2 * **Sec. 5.** AS 08.89.100 and 08.89.310, enacted by sec. 2 of this Act, take effect July 1,
3 2008.
4 * **Sec. 6.** Section 3 of this Act takes effect immediately under AS 01.10.070(c).

2-22-06

adopted

New

CONCEPTUAL AMENDMENT 1

OFFERED IN THE HOUSE FINANCE COMMITTEE BY Rep. Meyer
TO: CS HB 150 () Version 24-LS0470\B

1 **Page 6, lines 17-19**
2 Delete all material
3 **Page 6, line 17**
4 Insert
5 (A) **is enrolled in a program for the area approved under AS 08.89.160 and**
6 **pays the appropriate fee; or**
7 (B) **demonstrates to the satisfaction of the department that the applicant has**
8 **been performing limited scope radiologic diagnostic imaging under AS**
9 **08.89.150(b) for two years preceding July 1, 2008 and pays the**
10 **appropriate fee; or**
11
12
13
14
15
16
17
18
19
20
21
22
23
24

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: CSHB 150(JUD)
() Publish Date:

Revision Date/Time (Note if correction):
Title: Licensing Radiological Technicians
Sponsor: Anderson
Requester: House Finance

Dept. Affected:
RDU: Corp, Bus & Prof Licensing (117)
Component: Corp, Bus & Prof Licensing
Component No. 2360

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Personal Services	28.7	28.7	28.7	28.7	28.7	28.7
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	6.0	6.0	6.0	6.0	6.0	6.0
Supplies	1.0	1.0	1.0	1.0	1.0	1.0
Equipment	6.0	0.0	0.0	0.0	0.0	0.0
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	**41.7**	**35.7**	**35.7**	**35.7**	**35.7**	**35.7**
CAPITAL EXPENDITURES						
CHANGE IN REVENUES (1156)	**77.4**	**0.0**	**71.4**	**0.0**	**71.4**	**0.0**

FUND SOURCE (Thousands of Dollars)

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
1156 Receipt Supported Services	41.7	35.7	35.7	35.7	35.7	35.7
TOTAL	**41.7**	**35.7**	**35.7**	**35.7**	**35.7**	**35.7**

Estimate of any current year (FY2006) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2007 budget proposal: [ ]

POSITIONS

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Full-time						
Part-time	1	1	1	1	1	1
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

CSHB 150(JUD) establishes licensure for occupations relating to radiological technology. The division was originally advised that approximately 380 to 400 individuals would seek licensure under this bill. This estimate has been revised to reflect revenue for an estimated 500 Fully Licensed Technicians and 400 Limited Licensees.

An explanation of the costs shown above are attached.

Prepared by: Katherine Mason, Administrative Manager — Phone 907 465 2572
Division: Corporations and Licensing — Date/Time 2/8/06 6:23 PM
Approved by: William C Noll, Commissioner — Date 2/8/2006
Agency: Commerce, Community, and Economic Development

(Revised 9/8/2005 OMB)

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

BILL NO. CSHB 150(JUD)

ANALYSIS CONTINUATION

Total PERSONAL SERVICES: $28.7

-Occupational Licensing Examiner position, PPT, Range 13.

This fiscal note provides funding for half of an Occupational Licensing Examiner position to provide support to this licensing program.

Total TRAVEL: $0

Total CONTRACTUAL SERVICES: $6.0

- Printing, postage, communication, and advertising costs, $3.0
- Regulations-related costs to establish education criteria and standards, and other requirements; including AAG time, $3.0

Information has been received that licensure examinations are available from The American Registry of Radiological Technologists. The division will seek to make arrangements with this organization for use of the licensing examinations.

Total SUPPLIES: $1.0

To fund daily operating supplies of the program.

Total EQUIPMENT (one-time costs): $6.0

TOTAL FISCAL NOTE: $41.7

REVENUE: Revenue will be generated by individuals who seek licensing under this bill. Based on 900 licensees, each licensee can be expected to pay direct costs of approximately $86.00 ($77.4 biennial costs divided by 900); in addition to indirect costs of approximately $100.00 per person, for an approximate initial licensing fee of $186.00 biennially. Licensing fees will be adjusted at the first renewal based on actual costs and actual numbers of licensees.

adopted 2/13/06

24-LS0470\N
Mischel
2/9/06

Replaced 2/22/06

CS FOR HOUSE BILL NO. 150( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-FOURTH LEGISLATURE - SECOND SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVE ANDERSON

A BILL

FOR AN ACT ENTITLED

1 **"An Act requiring licensure of occupations relating to radiologic technology, radiation**
2 **therapy, and nuclear medicine technology; and providing for an effective date."**

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

4 *** Section 1.** AS 08.01.010 is amended by adding a new paragraph to read:
5 (39) regulation of radiographers under AS 08.89.
6 *** Sec. 2.** AS 08 is amended by adding a new chapter to read:
7 **Chapter 89. Radiographers.**
8 **Article 1. Licensing Requirements.**
9 **Sec. 08.89.100. Unlicensed practice prohibited.** (a) Except as provided in (b)
10 of this section, a person may not knowingly
11 (1) use radioactive materials or equipment emitting radiation on a
12 human for diagnostic or therapeutic purposes without a license or permit issued under
13 this chapter that authorizes the person to do so; or
14 (2) employ another to use radioactive materials or equipment emitting

1 radiation on a human for diagnostic or therapeutic purposes unless the employee has
2 an appropriate license or permit issued under this chapter.
3 (b) The licensing or permit requirement in (a) of this section does not apply to
4 a person who is
5 (1) a licensed practitioner;
6 (2) a dental assistant who uses equipment emitting radiation on
7 humans under the supervision of a licensed practitioner;
8 (3) licensed under another provision of state law if the license
9 authorizes the person to use radioactive materials or equipment emitting radiation on a
10 human for diagnostic or therapeutic purposes; or
11 (4) a student enrolled in and attending a school or college of medicine,
12 osteopathy, dentistry, dental hygiene, chiropractic, podiatry, radiologic technology,
13 radiation therapy, or nuclear medicine while, as part of course work in the school or
14 college, the student uses radioactive materials or equipment emitting radiation on
15 humans under
16 (A) the direct supervision of a licensed practitioner; or
17 (B) the direct supervision of a person fully licensed under this
18 chapter as a radiographer, radiation therapist, or nuclear medicine technologist,
19 as appropriate to the course.
20 (c) In this section, "under the direct supervision" includes the amount of
21 supervision needed to ensure that an examination or test conducted is performed safely
22 and appropriately.
23 (d) Violation of this section is a class A misdemeanor.
24 **Sec. 08.89.110. Use of title prohibited.** (a) Unless a person holds the
25 corresponding full or limited certificate of licensure or permit issued under this
26 chapter or proof of certification by the American Registry of Radiologic Technologists
27 or the Nuclear Medicine Technology Certification Board, a person may not use
28 (1) the title "radiographer," "radiation therapist," "nuclear medicine
29 technologist," "limited radiologic imager," "temporary permitted radiographer,"
30 "temporary permitted radiation therapist," "temporary permitted nuclear medicine
31 technologist," or "temporary permitted limited radiologic imager";

1 (2) an abbreviation that corresponds to a title listed in (1) of this
2 subsection; or
3 (3) another title, abbreviation, letters, figures, signs, or other devices
4 that would lead a reasonable person to believe that the person is licensed or permitted
5 under this chapter.
6 (b) Violation of this section is a class A misdemeanor.
7 **Sec. 08.89.120. Qualifications for full certificate licensure.** (a) In order to
8 receive a full certificate of licensure under this chapter, a person must apply to the
9 department in a manner that indicates whether the person is applying to practice as a
10 radiographer, radiation therapist, or nuclear medicine technologist. In addition, the
11 person shall
12 (1) be at least 18 years of age;
13 (2) have graduated from secondary school or have passed an approved
14 equivalency test;
15 (3) have graduated from a program approved by the department under
16 AS 08.89.130 in the area of practice for which the person seeks licensure;
17 (4) have met the examination requirement under AS 08.89.140 for the
18 area of practice for which the person seeks licensure; and
19 (5) pay the required fees.
20 (b) A full certificate shall specify the area of practice authorized under it.
21 (c) A person with a full certificate of licensure may practice in the authorized
22 area of practice only under the direction of a licensed practitioner.
23 **Sec. 08.89.130. Program approval; full certificates.** (a) The department
24 shall, upon application by a program, evaluate an educational program that trains
25 persons to receive full certificates of licensure under this chapter and approve or
26 disapprove the program according to the criteria in (b) of this section.
27 (b) The department shall approve a program evaluated under this section only
28 if
29 (1) the program is affiliated with at least one hospital that provides a
30 clinical component for the program that is considered to be adequate by the
31 department;

1 (2) the program's curriculum for each course of study in the areas of
2 practice licensed under AS 08.89.120 meets the standards approved by the Joint
3 Review Committee on Education in Radiologic Technology, the Joint Review
4 Committee on Educational Programs in Nuclear Medicine Technology, the United
5 States Department of Education, or another appropriate accreditation agency whose
6 standards are considered equivalent by the department; and
7 (3) a recognized national voluntary accrediting organization has
8 reviewed the program's application to the department and submitted the review
9 comments to the department.
10 **Sec. 08.89.140. Examinations; full certificates.** The examination requirement
11 under AS 08.89.120 may be met by meeting one of the following criteria:
12 (1) successfully passing an examination approved by the department in
13 the area of practice for which the full certificate of licensure is sought;
14 (2) proof of current certification by the American Registry of
15 Radiologic Technologists, Nuclear Medicine Technology Certification Board; or
16 (3) proof of current licensure in the area of practice for which a full
17 certificate of licensure is sought by another jurisdiction with standards for licensure
18 considered by the department to be equivalent to the standards of this state.
19 **Sec. 08.89.150. Qualifications for limited radiologic imager.** (a) In order to
20 be licensed as a limited radiologic imager, a person must
21 (1) be at least 18 years of age;
22 (2) have graduated from secondary school or have passed an approved
23 equivalency test;
24 (3) have graduated from a program approved by the department under
25 AS 08.89.160 or have not less than two years of clinical experience in limited
26 diagnostic radiologic imaging under the supervision of a fully licensed radiographer or
27 a licensed practitioner;
28 (4) have passed the exam approved by the department for limited
29 radiologic imager licensure; and
30 (5) pay the required fees.
31 (b) A limited radiologic imager

1 (1) may perform limited radiologic diagnostic imaging only under the
2 supervision of a fully licensed radiographer or a licensed practitioner;
3 (2) may perform only radiography of the chest, abdomen, and axial-
4 appendicular skeleton;
5 (3) may not perform radiologic procedures involving the use of
6 contrast media, use of fluoroscopic equipment, mammography, tomography, magnetic
7 resonance imaging (MRI), bone densitometry using ionizing radiation, nuclear
8 medicine, radiation therapy, or computed tomography imaging (CT scan).
9 **Sec. 08.89.160. Program approval for limited radiologic imager.** (a) The
10 department shall, upon application by a program, evaluate a program that trains
11 persons to be limited radiologic imagers and approve or disapprove the program
12 according to the criteria in (b) of this section.
13 (b) The department shall approve a program evaluated under this section if the
14 program includes didactic instruction and clinical instruction considered adequate by
15 the department in axial-appendicular skeleton radiography, chest and abdomen
16 radiography, equipment maintenance and operation, radiation safety and protection,
17 image production and evaluation, radiographic anatomy and positioning procedures,
18 and applicable federal and state requirements relating to patient care and safety or if
19 the program is instructed by and under the supervision of a fully licensed radiographer
20 or licensed practitioner and sponsored by a medical facility, as defined in
21 AS 18.26.900; in this subsection, "clinical instruction" means hands-on experience in
22 a health facility setting, such as in a hospital or clinic, under the supervision of a
23 licensed practitioner or fully licensed radiographer.
24 **Sec. 08.89.170. Temporary permit.** (a) The department may issue a
25 nonrenewable temporary
26 (1) limited permit to a person authorizing practice in an area
27 corresponding to the person's scope of radiology training if the person
28 (A) is enrolled in a program for that area approved under
29 AS 08.89.160; and
30 (B) pays the appropriate fee; or
31 (2) full permit to a person authorizing practice in an area

New Text Underlined [DELETED TEXT BRACKETED]

1 corresponding to the person's scope of radiology training if the person
2 (A) has taken an examination described under AS 08.89.140 or
3 08.89.150 for that area and the results are not yet available;
4 (B) applies for the temporary permit within one year after
5 completing a program approved under AS 08.89.130; and
6 (C) pays the appropriate fee.
7 (b) A temporary permit issued under this section must indicate the area of
8 practice authorized. Except as provided in (c) and (d) of this section, the permit
9 expires one year after completion of the program described in (a)(1) of this section or
10 upon receipt of the examination results referred to in (a)(2) of this section, whichever
11 is earlier.
12 (c) Notwithstanding (a) and (b) of this section, the department may issue a
13 nonrenewable temporary permit valid for two years to an applicant who pays a fee
14 determined by the department and who demonstrates to the satisfaction of the
15 department that the applicant has been performing limited scope radiologic diagnostic
16 imaging under AS 08.89.150(b) for two years preceding July 1, 2008. A two-year
17 temporary permit issued under this subsection qualifies the applicant for employment
18 only as specified in AS 08.89.150(b).
19 (d) Notwithstanding (a) - (c) of this section, if an applicant has provided proof
20 of certification by a recognized national credentialing body that covers the area of
21 practice for which a certificate of licensure is sought, the department may issue a
22 nonrenewable temporary permit valid for a period of one year to the applicant upon
23 payment of a fee determined by the department .
24 (e) A person who holds a permit under this section is entitled to use the title
25 "temporary permitted radiographer," "temporary permitted radiation therapist,"
26 "temporary permitted nuclear medicine technologist," or "temporary permitted limited
27 radiologic imager."
28 **Sec. 08.89.180. License renewal; continuing education.** (a) The department
29 may not renew a full certificate of licensure issued under this chapter unless the
30 licensee pays the required fee and submits evidence satisfactory to the department that
31 the person has met the applicable continuing education requirements as determined by

two

1 the department.

2 (b) A person with a full certificate of licensure who is licensed to practice in
3 more than one area of practice is not required to complete more continuing education
4 than a person with a full certificate of licensure who is licensed in only one area of
5 practice. However, the department, in its communications with persons who have a
6 full certificate of licensure in more than one area of practice, shall encourage those
7 persons to receive continuing education in all of the areas for which they are licensed.

8 (c) The department may not renew a limited radiological imager license issued
9 under this chapter unless the licensee pays the required fee and submits evidence
10 satisfactory to the department that the person has met the applicable continuing
11 competency requirements as determined by the department.

12 **Sec. 08.89.190. License or permit to be kept on file.** A person licensed or
13 holding a permit under this chapter shall keep on file at each place of the person's
14 employment the license or permit document issued under this chapter or a verified
15 copy of the license or permit document.

16 **Sec. 08.89.200. Notification of address changes.** A licensee or permittee
17 under this chapter shall notify the department in writing within 30 days after a name or
18 address change.

19 **Sec. 08.89.210. Reapplication after revocation.** A person whose license or
20 permit is revoked by the department for a reason other than nonpayment of fees may
21 not apply to be licensed under this chapter until one year has elapsed from the date of
22 revocation. The department may require an examination for reinstatement.

23 **Sec. 08.89.220. Fees.** The department shall set fees under AS 08.01.065 for
24 each of the following:

25 (1) application;

26 (2) examination;

27 (3) full certificate of licensure;

28 (4) limited certificate of licensure;

29 (5) temporary full permit;

30 (6) temporary limited permit;

31 (7) license renewal;

1 (8) adding an area of practice to an existing license;

2 (9) program approval under AS 08.89.130.

3 **Article 2. Prohibitions; Penalties; Disciplinary Sanctions.**

4 **Sec. 08.89.300. Prescription required.** (a) A person holding a license or
5 permit issued under this chapter may not knowingly use a radioactive substance or
6 equipment for radiologic procedures on a human for diagnostic or therapeutic
7 purposes except as prescribed by a licensed practitioner.

8 (b) Violation of this section is a class A misdemeanor.

9 **Sec. 08.89.310. Civil penalty for unlicensed practice.** A person required to
10 be licensed or to have a permit under this chapter who engages or offers to engage in a
11 type of diagnostic radiologic imaging, radiation therapy, or nuclear medicine
12 technology for which the person is not licensed or for which the person does not hold
13 a permit may be fined up to $5,000 under the citation procedures of AS 08.01.102 -
14 08.01.104.

15 **Sec. 08.89.320. Criminal penalty for certain fraudulent practices.** A person
16 who obtains or attempts to obtain a license or permit under this chapter by dishonest or
17 fraudulent means or who knowingly forges, counterfeits, or fraudulently alters a
18 license or permit issued under this chapter is guilty of a class B misdemeanor.

19 **Sec. 08.89.330. Grounds for disciplinary sanctions or denial of license.** The
20 department may impose a disciplinary sanction authorized under AS 08.89.340 on a
21 person licensed or holding a permit under this chapter or refuse to issue or renew a
22 license or permit if the department finds that the person

23 (1) used fraud or deceit in the procurement or holding of the license or
24 permit or in the application process for the license or permit;

25 (2) has been convicted of a felony in a court of competent jurisdiction,
26 either within or outside of this state, unless the conviction has been reversed and the
27 person has been discharged or acquitted, or unless the person has been pardoned with
28 full restoration of civil rights;

29 (3) is or has been afflicted with a medical problem, disability, or
30 addiction that, in the opinion of the department, impairs professional competence;

31 (4) has aided a person who is not licensed or permitted under this

1 chapter, or otherwise authorized to perform the duties of a licensee or permittee, to
2 perform diagnostic radiologic imaging, radiation therapy, or nuclear medicine
3 technology;
4 (5) has undertaken or engaged in a radiologic technology practice
5 beyond the scope of duties permitted by law;
6 (6) has, under an assumed name, impersonated a person licensed or
7 formerly licensed under this chapter or is performing duties of a fully certificated
8 licensee, a limited certificate licensee, or a person holding a permit;
9 (7) is a licensee or permittee under this chapter and has violated the
10 code of ethics established by the department;
11 (8) has interpreted a diagnostic image for a clinician, a patient, the
12 patient's family, or the public;
13 (9) is a licensee or permittee under this chapter and is or has been
14 incompetent or negligent in performance of the licensee's or permittee's duties.
15 **Sec. 08.89.340. Disciplinary sanctions.** (a) When it finds that a person
16 licensed or holding a permit under this chapter has committed an act listed in
17 AS 08.89.330, the department may impose the following sanctions singly or in
18 combination:
19 (1) permanently revoke a license to practice;
20 (2) suspend a license for a determinate period of time;
21 (3) censure a licensee;
22 (4) issue a letter of reprimand;
23 (5) place a licensee on probationary status and require the licensee to
24 (A) report regularly to the department on matters involving the
25 basis of probation;
26 (B) limit practice to those areas prescribed;
27 (C) continue professional education until a satisfactory degree
28 of skill has been attained in those areas determined by the department to need
29 improvement;
30 (6) impose limitations or conditions on the practice of a licensee.
31 (b) The department may withdraw a limitation, condition, or probationary

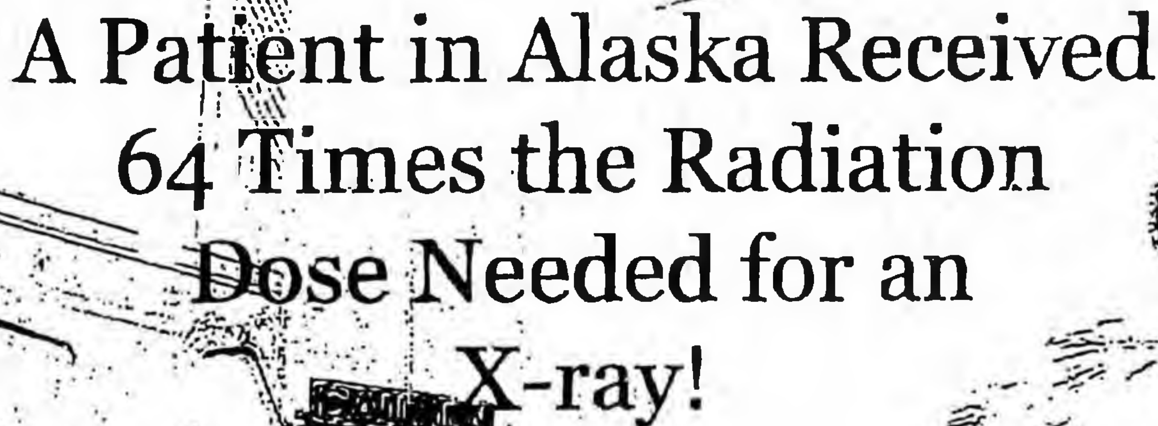
1 status if it finds that the deficiency that required the sanction has been remedied.
2 (c) The department may summarily suspend a license before final hearing or
3 during the appeals process if the department finds that the licensee poses a clear and
4 immediate danger to the public welfare and safety. A person is entitled to a hearing
5 conducted by the office of administrative hearings under AS 44.64.010 within seven
6 days after the suspension order is issued. A person may appeal an adverse decision
7 after hearing to the superior court.
8 (d) The department may reinstate a license that has been suspended or revoked
9 if the department finds after a hearing that the person is able to practice with
10 reasonable skill and safety.
11 **Article 3. General Provisions.**
12 **Sec. 08.89.900. Unified occupation for fee purposes.** For purposes of
13 AS 08.01.065, all persons licensed or holding a permit under this chapter are
14 considered to be engaged in the same occupation.
15 **Sec. 08.89.910. Regulations.** The department shall adopt regulations necessary
16 to implement this chapter.
17 **Sec. 08.89.990. Definitions.** In this chapter,
18 (1) "axial-appendicular skeleton" means the skull, including the
19 mandible, sinuses, and facial bones; spine, including cervical, thoracic, lumbar,
20 sacrum, and coccyx areas; pelvis; ribs; and upper and lower extremities;
21 (2) "contrast media" means an examination where contrast media is
22 introduced into a human body to define a part or parts not normally visualized on a
23 radiograph;
24 (3) "department" means the Department of Commerce, Community,
25 and Economic Development;
26 (4) "diagnostic radiologic imaging" means the making of film records
27 or digital records by passage of radiation through the body to act on specially
28 sensitized film or digital sensors;
29 (5) "direct supervision" means in the physical presence of a person
30 who assists, evaluates, and approves the performance of tasks;
31 (6) "knowingly" has the meaning given in AS 11.81.900(a);

1 (7) "licensed practitioner" means a physician, physician assistant,
2 nurse practitioner, podiatrist, osteopath, dentist, or chiropr ctor who is either licensed
3 in this state or, if practicing as a physician, podiatrist, or osteopath, is exempt from
4 licensure under AS 08.64.370(1) or (4);
5 (8) "limited radiologic imager" means a person licensed under
6 AS 08.89.150 to perform diagnostic radiologic imaging within the limits specified in
7 AS 08.89.150(b);
8 (9) "nuclear medicine technologist" means a person who prepares,
9 calibrates, and administers radiopharmaceutical agents to humans for diagnostic or
10 therapeutic purposes;
11 (10) "radiation therapist" means a person who applies radiation to
12 humans for therapeutic purposes;
13 (11) "radiographer" means a person who uses radiation on humans for
14 diagnostic purposes.
15 * Sec. 3. The uncodified law of the State of Alaska is amended by adding a new section to
16 read:
17 REGULATIONS. The Department of Commerce, Community, and Economic
18 Development may begin the process to adopt regulations to implement this Act. The
19 regulations take effect under AS 44.62 (Administrative Procedure Act) but not before the
20 effective date of the statutes implemented by the regulations.
21 * Sec. 4. Except as provided in secs. 5 and 6 of this Act, this Act takes effect July 1, 2006.
22 * Sec. 5. AS 08.89.100 and 08.89.310, enacted by sec. 2 of this Act, take effect July 1,
23 2008.
24 * Sec. 6. Section 3 of this Act takes effect immediately under AS 01.10.070(c).

THE
FOLLOWING
DOCUMENT(S)
ARE
POOR
ORIGINAL
COPIES

handout 2/22/06

A Patient in Alaska Received 64 Times the Radiation Dose Needed for an X-ray!



PROTECT YOURSELF!

Alaska should require licensing for individuals who take your x-ray!

Contact your state legislator!

www.legis.state.ak.us

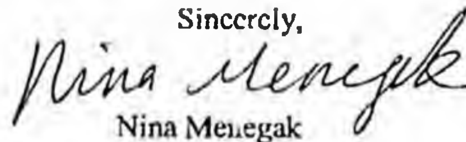
To Whom It May Concern:

I began working in Diagnostic Imaging as a secretary in June 2004. In December 2004 I started to learn to take x-rays under the supervision of a few Registered Radiographers. In working with these techs, I learned how to set a technique on the machines, how to access and shield a patient and limited positioning skills. I would often have to ask the Registered Radiographers if a film was "passable" or how to improve a non-diagnostic film.

In January of 2005, I enrolled in the "pilot" class of UAA's distance delivered Limited Scope Classes. I am currently taking the 3rd class in a series of 3. We meet online once a week for 1 hour and work through the course modules at our own pace. These classes have helped me to learn which anatomy should be visualized in each study, enhanced my positioning skills, and taught me the fundamentals of x-ray production. I have also learned technique manipulation and the qualities of a diagnostic film.

I am able to work confidently and independently of the technologists, and even pull my share of call. The classes have helped me to better understand the importance of radiation protection for patient, the family members and myself. I also understand the qualities of a good film.

Sincerely,



Nina Menegak

FISCAL NOTE

Replaced

STATE OF ALASKA
2005 LEGISLATIVE SESSION

Fiscal Note Number: 1
Bill Version: CSHB 150(L&C)
(H) Publish Date: 3/22/05

Revision Date/Time (Note if correction):
Title: Licensing Radiologic Technicians
Sponsor: Anderson
Requester: House Labor & Commerce

Dept. Affected: Commerce
RDU: Occupational Licensing (117)
Component: Occupational Licensing
Component No. 2360

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include infl[illegible]on unless otherwise noted below.

OPERATING EXPENDITURES	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personal Services	25.2	25.2	25.2	25.2	25.2	25.2
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	6.0	6.0	6.0	6.0	6.0	6.0
Supplies	1.0	1.0	1.0	1.0	1.0	1.0
Equipment	6.0	0.0	0.0	0.0	0.0	0.0
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	**38.2**	**32.2**	**32.2**	**32.2**	**32.2**	**32.2**
CAPITAL EXPENDITURES						
CHANGE IN REVENUES (1156)	**70.4**	**0.0**	**64.4**	**0.0**	**64.4**	**0.0**

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other 1156 - Receipt Supported Services	38.2	32.2	32.2	32.2	32.2	32.2
TOTAL	**38.2**	**32.2**	**32.2**	**32.2**	**32.2**	**32.2**

Estimate of any current year (FY2005) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2006 budget proposal: [ ]

POSITIONS

Full-time						
Part-time	1	1	1	1	1	1
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

HB 150 establishes licensure for occupations relating to radiologic technology. The division was advised that approximately 380 to 400 individuals will seek licensure under this bill. This fiscal note is based on the assumption there will be at least 400 licensees.

An explanation of the costs shown above are attached.

Prepared by: Jennifer Strickler, Administrative Manager
Phone: (907) 465-2144
Division: Occupational Licensing
Date/Time: 2/23/05 2:02 PM
Approved by: Edgar Blatchford, Commissioner
Date: 2/23/2005
Agency: Commerce, Community, and Economic Development

(Revised 9/23/2004 OMB)

FISCAL NOTE #1

STATE OF ALASKA
2005 LEGISLATIVE SESSION

BILL NO. CSHB 150(L&C)

ANALYSIS CONTINUATION

HB 150: Licensing Radiologic Technicians

Total PERSONAL SERVICES: $25.2

- Occupational Licensing Examiner I position, PPT, Range 13

This fiscal note provides funding for half of an Occupational Licensing Examiner I position to provide support to this licensing program. Last year, the division had a half time position in support of another licensing program that could have been made to full-time with this funding to support this program as well; however, that option is no longer available since that position has been assigned to support other new licensing programs. Therefore, this fiscal note identifies funding for half of a position and a corresponding position count.

Total TRAVEL: $0

Total CONTRACTUAL SERVICES: $6.0

- Printing, postage, communication, and advertising costs, $3.0
- Regulations-related costs to establish education criteria and standards, and other requirements; including AAG time, $3.0

Information has been received that licensure examinations are available from The American Registry of Radiologic Technologists. The division will seek to make arrangements with this organization for use of the licensing examinations.

Total SUPPLIES: $1.0

To fund daily operating supplies of the program.

Total EQUIPMENT (one-time costs): $6.0

TOTAL FISCAL NOTE: $38.2

REVENUE: Revenue will be generated by individuals who seek license under this bill. Based on 400 licensees, each licensee can be expected to pay approximately $176.00 biennially ($70.4 divided by 400) in direct costs; in addition to indirect costs of approximately $100.00 per person, for an approximate initial licensing fee of $276.00 biennially. Licensing fees will be adjusted at the first renewal based on actual costs and numbers of licensees.

Alaska State Legislature

House of Representatives

Official Business

State Capitol
Juneau, AK 99801-1182

SPONSOR STATEMENT FOR HB 150
BY: Representative Tom Anderson

"An Act requiring licensure of occupations relating to radiologic technology, radiation therapy, and nuclear medicine technology; and providing for an effective date."

The Radiologic Health Science professionals in the State of Alaska are dedicated to the preservation of life and health as well as the prevention and treatment of disease. The use of x-rays and other medical imaging disciplines is the most acceptable method for discovering and treating many conditions that might not otherwise be observed until it is too late for treatment.

The unregulated practice of Radiologic Technology, Nuclear Medicine Technology and Radiation Therapy by unqualified individuals represents a serious health risk to the citizens of Alaska. The Alaska Society of Radiologic Technologists has consistently supported the enactment of state standards for the education and credentialing of Radiologic Technologists, Radiation Therapists and Nuclear Medicine Technologists as a means of protecting Alaskans from the harmful effects of excessive and unnecessary exposure to medical radiation.

Any radiology 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. Patients have long benefited from Alaska's wisely implemented Radiology equipment performance standards but those benefits can easily be negated by under trained operators of the equipment. To be clinically useful, diagnostic imaging exams must be accurate. To stop invasive cancers, radiation therapy treatments must be precise.

To ensure that the citizens of the State of Alaska receive maximum protection practicable from the harmful effects of excessive and improper exposure to ionizing radiation, licensure must be passed to establish standards.

Establishing state standards will ensure that Alaskans will have access to safe and high quality radiologic care. Licensure for Radiologic Technologists, Radiation Therapists and Nuclear Medicine Technologists will establish radiation protection measures as well as education and credentialing standards that will ensure the competency of persons operating medical equipment emitting radiation.

I urge your support of this important piece of legislation.

24-LS0470\R

Alaska State Legislature
House of Representatives

Official Business

State Capitol
Juneau, AK 99801-1182

Sectional Analysis for HB 150
BY: Representative Tom Anderson

Section 1. Amends AS 08 is amended to add a new section

Sec. 08.89.100 defines who needs to acquire a Radiological Technician license under this bill. Also provides exemptions for the license.

Sec. 08.89.110 limits the titles a person can use if they do not hold a license.

Sec. 08.89.120 defines the minimum requirements to receive a license

Sec. 08.89.130 describes how the Department of Health and Social Services shall approve licensure programs.

Sec. 08.89.140 describes the radiological licensure examinations.

Sec. 08.89.150 defines the qualifications for a limited radiological imager license

Sec. 08.89.160 describes how the Department of Health and Social Services shall approve limited radiological licensure programs.

Sec. 08.89.170 provides for the application and scope of a temporary permit for practice of radiology and allows a person to receive such a permit if they can prove they were performing radiological work before the passage of HB 150

Sec. 08.89.180 defines the license renewal process

Sec. 08.89.190 states that a licensee must keep their license or a copy of their license on file at their place of employment

Sec. 08.89.200 states that the licensee must notify the Department of a name or address change within 30 days

Sec. 08.89.210 states that a person whose license is revoked for a reason other than late payment of fees must wait 24 months before reapplying for a license.

Sec. 08.89.220 directs the Department to set fees for various aspect of the licensure process.

Sec. 08.89.300 limits the use of radiological equipment on a patient without a prescription.

Sec. 08.89.310 defines a civil penalty for practicing radiology without a license.

Sec. 08.89.320 defines a criminal penalty for a person who obtains or attempts to obtain a license through fraudulent means.

Sec.08.89.330 defines the grounds for disciplinary actions or denial of license.

Sec. 08.89.340 defines under what situations the Department may impose sanctions on a licensee.

Sec. 08.89.900 states that for the purposes of 08.01.065, all persons who hold a radiological license are considered to be engaged in the same occupation.

Sec. 08.89.990 outlines various definitions for terms in HB 150.

Section 2. Amends AS 44.64.030(a)(6)

This allows the Board of Radiological Technicians to conduct disciplinary hearings.

Section 3. The uncodified law of the State of Alaska is amended

Directs the Department of Commerce, Community and Economic Development and the division of occupational licensing to begin the process of adopting and implementing the regulations created by HB 150.

Section 4. The uncodified law of the State of Alaska is amended

Details revisors' instructions for reconciliation of sec. 2 of this bill with sec. 82, ch. 163, SLA 2004.

Section 5 Effective date of this act except as provided by sec. 6 and 7

Section 6. Effective date of AS 08.89.100 and AS 08.89.310

Section 7. Effective date of Section 3

Representative Foster,

Thank you for responding to me email so quickly and my apologies for some delay in getting back to you. I wanted to make sure that I gave you the most accurate answer possible. I'm sure you will agree that there will definitely be a cost increase despite the rad tech association's assurances in their testimony that there will be none.

The following is my best estimate on the direct costs to my personal business, which consists of two clinics and 10 employees taking x-rays.

The course the bill's promoters are referring to is through Glacier Valley Medical Education, glaciermedicaled.com. The registration fee for the course is $229 per person. The online course is estimated to take 240 hours to complete on average. Some will likely need less time, some more time, but let's at least use what they say is the average. I believe it is reasonable that an employee will want to be compensated for the time spent on the course. My average employee wage for the 10 persons taking xrays is $15.03 per hour. There may be some time the employee could spend on the course while at the job site, but our clinics are very busy and the employee is then neglecting their other job duties. Likely, the employee will have to do this during their own free time. Most of my employees spend 30-40 hrs per week already on the job. If the employee spent an additional 2 hours per day, 5 days a week, it would take the employee 6 months to complete the course.

In addition, I am estimating a yearly licensing fee from the state at $50. You also must [illegible] in continuing education costs. I would guess the number of credits required yearly will be about 15, at a cost of $4 per credit from the same online company.

If you do the math, here is what I estimate:

First Year:
1. Course registration: $229 x 10 employees = $2290.00
2. Hourly wages: 240 hrs x 10 employees x $15.03 average wage = $36,072
3. License fee: $50 x 10 employees = $ 500

First Year Total $38,862.00

Recurring yearly fees:
1. Continuing education fees: $4 per credit x 15 credits needed x 10 employees = $600
2. Continuing education wage time: 15 credit hours x 15.03 average wage x 10 employees = $2254.50
3. New employee training (average 1 new employee/year between clinics): $229 course registration + wage time ($15.03 per hour x 240 hrs) of $3607.20 = $3836.20
4. Yearly license fees: $500

Every Year Total $7,190.70

Again, these are estimates as the licensing fees and CME requirements are not yet defined. But I believe this is a very close estimate of what this bill will cost just our clinics. Multiply these numbers by the number of small doctor's offices and clinics to get an idea of what the direct costs to small business will be across the state. This will

especially hit small rural subsidized clinics hard in the wallet. I realize there are employers out there that will not agree to pay for some of the above things I mentioned for their employees, and make them study on their own, or not reimburse them for CME expenses. I think most offices and clinics will choose to or have to pay up in order to retain quality employees.

I would ask that you also consider the indirect costs to the health system as well. Specifically, the real possibility that x-ray services will no longer be offered in some offices and rural clinics, requiring that the patient be transported or flown into a larger community just to do an x-ray. In addition, you are likely to see over and inappropriate utilization of emergency rooms and hospitals for a simple x-ray. It is much cheaper and quicker if you are seen at an outpatient clinic for your ankle injury than in the ER.

Thank you for your time in considering my point of view. I hope this will help you make an informed decision.

Don Smith, PA-C
President, AKAPA
373-6055

Representative Moses, 2-7-06

I am the co-owner of two out patient medical clinics, and the current president of the Alaska Academy of Physician Assistants. From a business stand point, and on behalf of the AKAPA, I am opposed to HB 150 in its present form. I would ask that this letter be entered into the record as public testimony when you hear the bill.

HB 150 passed through the Judiciary Committee on Friday, and is moving on to your committee.

I certainly agree that licensing and regulation is necessary for individuals doing procedures involving high levels of radiation such as CT scans. However, for simple plain in-office/clinic x-rays I feel the bill goes too far. Plain x-rays for wrist or ankle or even a chest expose the patient to very low levels of radiation. There is a significant amount of presumption by those that support the bill that this low level of radiation may cause some health problems now or later, but there is still no documented evidence of such harm.

This bill exists to promote patient safety, and the AKAPA and I will always strive to deliver quality and safe healthcare. I believe that there needs to be a balance between the perceived and presumed safety of the public, and the reality of the financial cost of healthcare. Again-please pass this bill to license and regulate persons doing high radiation level procedures.

However, I would respectfully ask that the bill exclude the licensing of professionals performing x-rays in office/clinic settings for the following reasons:

1. There is NO documented evidence of any patient harm.
2. The financial burden placed on primary care clinics, especially rural clinics, by this bill is NOT out weighed by any perceived risk to the patient.

There has been testimony by the rad tech association that the bill will not raise costs, but consider the following - the fee for the course will be at least $229, my personnel will need to be paid for the time they are studying and taking the test, the yearly licensing fees, continuing education course costs and registration fees. All of this contributes to increasing the cost of health care delivery. These are admittedly not huge numbers, but add it into the mix of the most regulated industry in the US, and we will all continue to wonder why health care eats up so much of the GDP. I firmly believe that this increase in cost will lead to limitation of services and competition, especially in rural clinics and small clinics such as mine where the profit margins barely exist. I think you will see patients in bush communities being flown to Anchorage or Fairbanks just for an x-ray, or conversely not traveling and delaying care with potentially disastrous outcomes.

The current bill will allow unlicensed persons to continue to take x-rays as long as they are enrolled in a course, and will allow those persons up to 1 year to complete the course. It also has language that will allow "licensed practitioners" (doctors, NPs, etc) to take x-rays. (I am very pleased the bill has at least been amended recently to include PAs as licensed practitioners.) How can anyone possibly claim that a significant safety issue exists if you continue to allow unlicensed persons to take x-rays for that 1 year time period, or have your "practitioner" take the x-ray? In general, medical schools and PA schools do not teach how to take x-rays, only to interpret them. My nurses take our x-rays after undergoing internal training, and our films are over read by a radiologist ensuring proper technique and an adequate study. There is no misdiagnosis by a bad study if these simple practices are followed. This is the norm for the majority of clinics. I realize these items are compromises and appreciate what the author is trying to do, but I believe they speak the point that there really is no safety issue here.

The last two committees the bill went through expounded on the need for protecting the public, and that radiation is a carcinogen. That makes for great political rhetoric and no one can argue against those principles, but again, the point I am trying to make clear is that in office/clinic x-rays do not pose a significant threat to public health and safety, and the need to continue such services currently outweighs the perceived danger.

I respectfully ask that you strongly consider these thoughts in your upcoming meetings, and not dismiss them as readily as your colleagues. I believe a reasonable compromise between safety and economics exists. The current bill is not it.

Don Smith, PA-C

Ed Hall

From:	Ed Hall
Sent:	Monday, February 13, 2006 3:23 PM
To:	'Representative_Mike_Chenault@legis.state.ak.us'
Cc:	'don@alaskamedicalclinics.com'; ',ehall@beaconohss.com'
Subject:	HB 150

Dear Rep Chenault:
I am sitting here listening to Mr. Clyde Pearce testify regarding HB 150. I have never testified that I did not know how to use xray equipment nor do I think that Don Smith ever testified that he did not know how to use euipment. What we did say is that many providers who are to be exempt may not know how to use equipment. This is yet one more example of how the supporters of this bill take things out of context and sensationalize their agenda. I would appreciate it if you would share this note with your committee for clarification.
We (the Ala[illegible] [illegible]cademy of Physician Assistants) still stand against this bill as it will create a finacial burden and decrease access to care. I remind you that we are only against the bill as it pertains to basic xrays and not other procedures such as mammography, CT and MRI scanning. We think that the continued medical education requirement in this bill is onerous and would not necessarily make a basic radiographer any more proficient. They would however have to pay to obtain CME to satisfy the requirements of this bill. We would even support a bill that would that would require xrays be over read by radiologists that would help ensure quality of care.
If possible, please read this during this hearing.
Thank you.
Regards,
Ed Hall PA-C

Suzanne Cunningham

From: Ed Hall [ehall@beaconohss.com]

Sent: Saturday, February 11, 2006 12:49 PM

To: Rep. Kevin Meyer

Subject: HB 150

February 7, 2006

TO: Rep. Lesil McGuire
Chair of Judiciary Committee

FROM: Ed Hall PA-C

RE: HB 150

Dear Representative McGuire:

I wanted to take the opportunity to follow up on the hearing of HB 150 in the judiciary committee last Friday, Feb. 3, 2006. I am dismayed that only two of your committee members seemed to grasp the negative impact that this bill will have on access to care in Alaska. I acquiesced to your plea to stay on subject as you directed everyone who wanted to testify on this bill. As you recall, you instructed everyone to direct comments to the content of the bill that pertained to the legality of the fines that would be levied if the bill passed and was subsequently violated. I was to testify on behalf of the Alaska Academy of Physician Assistants (AKAPA) against this bill. Per your request I was unable to elaborate on the reasons we feel this is not a good bill. We have tried in earnest to work with the radiology board to come up with appropriate solutions to ensure that safe practices are followed when dealing with radiographic exposure. To date, the only change that the authors have made is that they have added physician assistants to the list of exempt providers. Now after the hearing on Friday, suggested changes to this list has made this bill more nebulous. So far the following are the facts that many providers of health care are frustrated with.

1. There has been NO objective evidence presented of any harm that individuals have suffered secondary to basic x-rays. We are not denying that the potential is there but it just does not seem to be a current medical problem. Aren't bills supposed to fix problems? It would make more sense to pass a bill requiring providers to have their films over read by a radiologist which is a common practice already in most conscientious providers.

2. There seems to be nonchalance about the cost that this bill will create, particularly in the rural areas. Clinics who currently employ well trained, educated persons to shoot x-rays may not be able to afford hiring certified radiology technicians. The options then would be to discard the option of shooting an x-ray or send patients by plane to the nearest facility to get an x-ray which will ultimately lead to substandard care or significantly increased costs.

3. This bill is supposedly a health issue. Inquiring minds are confused as to why this bill is not being considered by the HESS committee? It makes providers feel like there are ulterior motives for this bill. Most allopathic providers understand evidenced based

medicine and decisions made based on the science. Your committee is fortunate to have the input of Representative Peggy Wilson who has the medical background and experience with a similar bill back east that disrupted medical care access. When she voiced her concerns, she was responded to with sarcasm by Representative Anderson. He commented that the reason that individuals haven't come to the HESS committee with health concerns is that they were all dead from over exposure. This type of humor may be appropriate for some Friday night bar session throwing jibes at constituents but when we are serious about our concerns regarding a bad bill and have waited two hours to testify, we deserve much more decorum. Shame on him.

Personally I hear a different tone in you this year compared to last year when you were more concerned about why this bill is not a good idea as written. I urge you to contemplate these thoughts before you take the opportunity to vote in favor of it's final passage.

Thank you for your time.

Ed Hall PA-C
Wk (907) 222-7612
Email edhallpac@gci.net <mailto:edhallpac@gci.net>

Representative Meyer, 2-7-06

I am the co-owner of two out patient medical clinics, and the current president of the Alaska Academy of Physician Assistants. From a business stand point, and on behalf of the AKAPA, I am opposed to HB 150 in its present form. I would ask that this letter be entered into the record as public testimony when you hear the bill.

HB 150 passed through the Judiciary Committee on Friday, and is moving on to your committee.

I certainly agree that licensing and regulation is necessary for individuals doing procedures involving high levels of radiation such as CT scans. However, for simple plain in-office/clinic x-rays I feel the bill goes too far. Plain x-rays for wrist or ankle or even a chest expose the patient to very low levels of radiation. There is a significant amount of presumption by those that support the bill that this low level of radiation may cause some health problems now or later, but there is still no documented evidence of such harm.

This bill exists to promote patient safety, and the AKAPA and I will always strive to deliver quality and safe healthcare. I believe that there needs to be a balance between the perceived and presumed safety of the public, and the reality of the financial cost of healthcare. Again-please pass this bill to license and regulate persons doing high radiation level procedures.

However, I would respectfully ask that the bill exclude the licensing of professionals performing x-rays in office/clinic settings for the following reasons:

1. There is NO documented evidence of any patient harm.
2. The financial burden placed on primary care clinics, especially rural clinics, by this bill is NOT out weighed by any perceived risk to the patient.

There has been testimony by the rad tech association that the bill will not raise costs, but consider the following - the fee for the course will be at least $229, my personnel will need to be paid for the time they are studying and taking the test, the yearly licensing fees, continuing education course costs and registration fees. All of this contributes to increasing the cost of health care delivery. These are admittedly not huge numbers, but add it into the mix of the most regulated industry in the US, and we will all continue to wonder why health care eats up so much of the GDP. I firmly believe that this increase in cost will lead to limitation of services and competition, especially in rural clinics and small clinics such as mine where the profit margins barely exist. I think you will see patients in bush communities being flown to Anchorage or Fairbanks just for an x-ray, or conversely not traveling and delaying care with potentially disastrous outcomes.

The current bill will allow unlicensed persons to continue to take x-rays as long as they are enrolled in a course, and will allow those persons up to 1 year to complete the course. It also has language that will allow "licensed practitioners" (doctors, NPs, etc) to take x-rays. (I am very pleased the bill has at least been amended recently to include PAs as licensed practitioners.) How can anyone possibly claim that a significant safety issue exists if you continue to allow unlicensed persons to take x-rays for that 1 year time period, or have your "practitioner" take the x-ray? In general, medical schools and PA schools do not teach how to take x-rays, only to interpret them. My nurses take our x-rays after undergoing internal training, and our films are over read by a radiologist ensuring proper technique and an adequate study. There is no misdiagnosis by a bad study if these simple practices are followed. This is the norm for the majority of clinics. I realize these items are compromises and appreciate what the author is trying to do, but I believe they speak the point that there really is no safety issue here.

The last two committees the bill went through expounded on the need for protecting the public and that radiation is a carcinogen. That makes for great political rhetoric and no one can argue against those principles, but again the point I am trying to make clear is that in office/clinic x-rays do not pose a significant threat to public health and safety, and the need to continue such services currently outweighs the perceived danger.

I respectfully ask that you strongly consider these thoughts in your upcoming meetings, and not dismiss them as readily as your colleagues. I believe a reasonable compromise between safety and economics exists. The current bill is not it.

Don Smith, PA-C

States With Licensure or Certification Laws

U.S. States with Licensure/Certification Laws or Regulations and Year of Implementation

Arizona-1977
Arkansa-1999
California-1969
Connecticut-1993
Delaware-1989
Florida-1979
Hawaii-1974
Illinois-1990
Indiana-1982
Iowa-1987
Kansas-2004
Kentucky-1978
Louisiana-1984
Maine-1984
Maryland-1992
Massachusetts-1987
Mississippi-1996
Montana-1977
Nebraska-1987
New Jersey-1968
New Mexico-1983
New York-1965
North Dakota-2003
Ohio-1995
Oregon-1979
Rhode Island-1994
South Carolina-1999
Texas-1987
Utah-1989
Vermont-1984
Virginia-1997
Washington-1991
West Virginia-1977
Wyoming-1985

States With Partial Licensure Laws and/or Other Forms of Regulation

- **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 to perform patient examinations in physician, osteopathic physician, podiatrist, chiropractic or dentist offices.
- **Minnesota** – Operator of any x ray equipment for human use must be either a registered radiologic technologist through the ARRT, a licensed person from another state (and are then given an x-ray operator equivalent standing) or have passed one of Minnesota's state approved exams.
- **Tennessee** – Technologists who have not passed the ARRT or other board-approved examination must pass a state examination to perform patient examinations in physician, osteopathic physician, podiatrist, chiropractic or dentist offices.
- **Wisconsin** – Requires that all CT technologists and radiation therapists be ARRT certified.

States without Licensure Laws or With Legislative Proposals Being Considered

Alabama
Alaska
District of Columbia
Georgia
Idaho
Missouri
New Hampshire
North Carolina
Oklahoma
South Dakota

Questions and Answers About Licensure

Q *How does the unregulated practice of radiologic technology harm or 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 health care workers 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 radiologic patient care.

Q *How will the public benefit from licensure of radiologic technologists?*

A The public benefits by receiving care from properly educated and credentialed professionals who have met all of the requirements to practice radiologic technology.

Q *How do we ensure the competencies of radiologic technologists?*

A No one can be 100 percent sure of the competencies 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 competence of radiologic technologists. The curriculum for educational programs in radiologic technology is competency based, meaning students must meet performance objectives. The national certification examination also 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 have been no appreciable increases 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

March 4, 2005

The Honorable Tom Anderson
Alaska House of Representatives
State Capitol Building, Room 408
Juneau, AK 99801-1182

Dear Representative Anderson:

The American Society of Radiologic Technologists, representing more than 116,000 medical imaging professionals nationally including 350 in Alaska, is pleased to hear of your introduction of HB 150 before the Alaska Legislature.

The ASRT'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 federal 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, 41 states have enacted licensure, certification laws or regulations for medical imaging and radiation therapy professionals and the regulations vary widely from state to state. Hopefully Alaska will be the 42nd state to enact a law that guarantees that all members of the public—young, old, male and female—receive safe and high-quality radiologic examinations and treatments.

We have worked closely with our state affiliate society, the Alaska Society of Radiologic Technologists, to advocate education and credentialing standards for persons who perform medical imaging, plan and deliver radiation therapy treatments for Alaska's citizens. Please feel free to call upon me in the ASRT Government Relations department if I can be of further assistance.

Sincerely,

David R. Harwell
State Legislative Coordinator

Providence Alaska Medical Center

3200 Providence Drive
P.O. Box 196604
Anchorage, Alaska
99519-6604

Tel 907 562.2211

February 22, 2005

The Honorable Tom Anderson
Alaska State House of Representatives
State Capitol (MS 3100)
Juneau, AK 99801-1182

Dear Representative Anderson:

I know you are aware that many interested parties have worked for quite some time to come to agreement on legislation for the licensure of occupations relating to radiological technology, radiation therapy, and nuclear medicine technology. I'm pleased to inform you that as a result of those efforts, and the tremendous effort put forth by you and your staff, Providence Health System in Alaska supports HB 150.

I appreciate your willingness to work with Providence and all other interested parties to come up with a piece of legislation that reflects a commitment to quality improvement in this facet of Alaska's health care delivery. Thank you for giving us the opportunity to work on this legislation and our sincere appreciation goes to you for your patience.

Sincerely,

Laurie Herman

Laurie Herman
Regional Director, Government Affairs

ASHNHA Position on Draft Committee Substitute for HB 150
Prepared by: Rod Betit, President/CEO
February 2, 2006

The Alaska State Hospital and Nursing Home Association (ASHNHA) continues to support HB 150 requiring licensure of occupations relating to radiologic technology, radiation therapy, and nuclear medicine technology.

Over the last 3 years ASHNHA has worked with the sponsor and other interested parties to resolve our memberships' concerns with earlier versions of this legislation. These concerns have been addressed to our satisfaction in the latest draft Committee Substitute to HB 150.

ASHNHA's membership believes CSHB 150's goal of strengthening the quality of imaging services provided throughout the State can be achieved without creating a workforce crisis for our smaller hospitals.

We have appreciated the sponsor's willingness to reach a workable compromise on this piece of legislation.

While I am personally unable to attend the next hearing on this bill, I wanted to go on record supporting Draft CSHB 150 and urge that it be moved out of Committee at the earliest opportunity.

If ASHNHA can provide any additional information, please contact our main office at 586-1790 in Juneau.

ASHNHA Proudly Represents the Following Alaska Health Care Providers

Alaska Regional Hospital, Alaska Native Medical Center, Alaska Pioneer Home System, Bartlett Regional Hospital, Bassett Army Community Hospital, Central Peninsula General Hospital, Cordova Community Medical Center, Denali Center Nursing Home, Fairbanks Memorial Hospital, Heritage Place Nursing Home, Kanakanak General Hospital, Ketchikan General Hospital, Maniilaq Health Center, Mary Conrad Center, Mat-Su Regional Hospital, Mt. Edgecumbe Hospital SEARHC, Norton Sound Regional Hospital, Petersburg Medical Center, Providence Alaska Medical Center, Providence Extended Care Center, Providence Kodiak Island Medical Center, Providence Seward Medical & Care Center, Providence Valdez Medical Center, Sitka Community Hospital, South Peninsula Hospital, USAF 3rd Medical Group- Elmendorf, Wrangell Medical Center, Yukon Kuskokwim Delta Regional Hospital, Alaska Psychiatric Institute, North Star Behavioral Health System, Wildflower Court Nursing Home.

Secretary

Alaska Primary Care Association
903 Northern Lights Blvd. Suite 200
Anchorage, Alaska 99503
907.929-2722 phone 907.929-2734 fax
"Uncompromising in the pursuit of access to primary care for all Alaskans"

Re: Public Testimony for (H) Finance Committee: HB 150 Licensing Radiologic Technicians

February 13, 2006

Dear Representative Meyers and Chenault and House Finance Committee Members,

Alaska Primary Care Association (APCA) represents 24 health care organizations and 115 Community Health Centers (CHCs), as well as other safety net providers throughout Alaska. CHCs are not-for-profit safety net providers and operate on very slim margins. The great majority of our sites are located in rural and remote areas of the state.

We have been monitoring HB 150, *Licensing Radiologic Technicians*, so that our rural sites would not face hardships in securing, affording, and retaining licensed limited radiologic imagers and so that they would not be forced to transport patients to cities at a high price, causing delayed treatment and additional pain and suffering for patients.

Although we believe that licensure does not guarantee safety improvements, and that, in reality, onsite quality assurance checks of not only the *equipment* (as is already conducted by the State of Alaska) but also of the *equipment operators* would better ensure these desired safety improvements than licensure, APCA would like to thank the bill's sponsor, Representative Anderson, for reworking the language to better accommodate CHCs.

In lieu of stopping the bill altogether or rewo-king it to require prescribed training and onsite quality assurance checks but not licensure for limited radiologic imagers, we would like to draw your attention to a disparity in temporary permit expirations for limited radiologic imagers and ask that this incongruity be corrected.

On page 6 of the workdraft presented on Monday, February 13, please note lines 9 and 13: the disparity between the 2-year validity of the temporary permit allowed for a person with 2-years prior experience in section (c), line 13, and the 1-year validity of the temporary permit allowed for a person without prior experience in section (b), line 9. APCA requests that the word "one" in section (b) be changed to the word "two" to allow less-experienced and new hires equitable time for examination preparation and licensure attainment.

In conclusion, APCA asks that House Finance Committee Members carefully weigh the safety vs. access issues of this bill, and prior to taking a vote, address the disparity in the temporary permits discussed above by adjusting the language as requested.

Respectfully,

Shelley S. Hughes

Shelley S. Hughes
Policy Analyst
Alaska Primary Care Associat.on

-----Original Message-----
From: Pearce, Clyde E
Sent: Monday, January 23, 2006 9:22 AM
To: Heath_Hilyard@legis.state.ak.us
Subject: FW: Mis-Use of radiation

-----Original Message-----
From: Pearce, Clyde E
Sent: Friday, January 20, 2006 1:38 PM
To: 'djru@sphosp.com'
Subject: Mis-Use of radiation

The review of cases is not complete, but I understand you are in a hurry to obtain this information so am sending it now.

MIS-USE OF RADIATION IN ALASKA -
Findings from Radiological Health Inspections.

In **Anchorage** a small clinic using untrained staff exposed patients to at least 64 times the amount of radiation required to obtain a diagnostic image, because the operator had no idea what technique to use and her supervisor advised a corrective measure that actually increased the exposure. The image was totally black due to excessive radiation, but her supervisor advised her to increase the exposure because a black image meant to her that not enough radiation was used. The operator was ignorant an. her supervisor, and supposedly "trainer", was also ignorant of basic imaging concepts. There is no way to tell how much exposure the patient actually received, only that it was *at least* 64 times more than required for that first image, based on retrospective testing by the Radiological Health Program.*

A patient was over-exposed in **Petersburg** also because no applicable technique chart was available and the operator did not verify the technique was correct prior to making the exposure. This problem of guessing at techniques has been found in approximately 20% of facilities statewide.*

A facility in **Fairbanks** was found to be using the "technique by guess" approach and after the inspector conducted a repeat analysis of their discard file found that approximately half the images were repeated due to overexposure or underexposure. Underexposure causes excessive exposure to patients because although they have already been exposed they must be exposed again at a higher amount in order to achieve a diagnostic image.*

A facility in **Fairbanks** routinely exposes patients to excessive amounts of radiation because the operator does not know anatomy and positioning, resulting in repeated exposures in an attempt to visualize the true nature of the patient's anatomy. A skull exam can be performed in a way that exposes the eye lens to twenty times (20) as much radiation as the correct method, while using the same radiation exposure technique for either. Likewise, a chest x-ray performed one way causes a woman's breasts to receive

thirteen (13) to twenty-two (22) times as much radiation even though the same exact exposure technique would be used either way. Slight modifications or errors in position result in failure to demonstrate anatomical features essential to enabling a physician to make a correct diagnosis, so that a solid background knowledge of human anatomy and radiographic positioning is essential to keeping radiation exposures low. This error is not correctable using automated x-ray machines.*

Two facilities in southeast Alaska (**Craig** and **Petersburg**) were routinely exposing patients to between eight (8) and ten (10) times the amount of radiation required for optimum images due to mismatched films and screens. Old films with old screens require more radiation that the newer rare earth screens with green-sensitive film. However, when old technology (old screens) was mixed with new technology (green sensitive extremity film) the exposures are much higher than the old technology alone. Even using matched film and screens can cause unacceptable exposure levels when screens designed for extremity imaging (improved details, with higher dose) are used inappropriately for axial body procedures. This error is not correctable using automated x-ray machines.

A digitized x-ray machine being used in **Eagle River** was causing higher exposures than the previously used film/screen combination because the machine was not adjusted properly. Unlike film/screen systems, the over exposures were not obvious to the operator because the electronic system automatically adjusts the image no matter what amount of radiation is used. Automatic imaging (Computed radiography and digital radiography units) has the POTENTIAL to reduce exposures, however they can be operated at higher exposure levels than is required for film if not used properly.

A facility in **Juneau** has been reported to routinely use fluoroscopy to pre-position patient's prior to exposing a film, in the apparent belief that this reduces repeats due to positioning errors. This ignores the fact that the patient has already been exposed to one of the highest exposure procedures, in addition to the follow-up radiography exposures. Follow-up of this report will be conducted. This error is not correctable using automated x-ray machines.*

Approximately forty-eight (48) % of facilities are unable to provide documentation that operators are provided facility specific radiation safety instructions as required by Alaska radiation control regulations (18 AAC 85.430).

A facility in **Fairbanks** had a gassy x-ray tube, but because neither the operator nor the owner were not knowledgeable about the characteristics of gassy tubes this was missed for a prolonged period of time. Gassy tubes are incapable of producing consistent output, making high repeat exposures inevitable. This error is not correctable using automated x-ray machines.

A facility on the **Alaska Peninsula** had two operators with no formal training in radiology practicing positioning and exposure techniques by x-raying each other. This is

illegal and hazardous to the operators. This error is not correctable using automated x-ray machines.*

Approximately thirty-one (31) percent of facilities do not have a processor quality control program. Increasing exposure to the patients until a useable image is obtained often compensates for poor processing conditions. This increases repeat images, and greatly increases the exposures beyond optimum requirements. Developer that is too cold, low replacement rates, pH errors and contamination of processing tanks contribute significantly to excessive exposures. *

Approximately thirty-six (36) percent of facilities do not perform repeat analysis of spoiled images. Repeat analysis is required y federal law for mammography, and encouraged for all imaging procedures to identify problems that are correctable and indications that a machine may need repair. As a result of failure to regularly perform repeat analysis inspections reveal that old procedures previously responsible for higher exposures than necessary continue to be followed, with no reduction in exposure to patients or operators.*

Facilities in **Kodiak**, **Petersburg** and **Juneau** have demonstrated lack of knowledge on how to use lead shielding correctly, resulting in exposure to reproductive organs that are up to one-hundred (100) times higher than necessary for the study. Aprons and gloves significantly reduce exposures to shield areas and are required by regulations. This error is not correctable using automated x-ray machines.*

A facility in **Petersburg** documented accidental exposure of the film storage bin to visible light on four different occasions, causing a direct financial loss of approximately $4,000. However, in an attempt to salvage some of the loss spoiled film was used which had been sensitized to light and x-rays. This reduces image contrast and can mask pathology, as well as changing the film response speed so that techniques become less predictable and exposure repeat rates increase.

A facility in **Girdwood** experienced a fogged film bin and the operator had no awareness of the cause of that problem or its implications for diagnostic accuracy.

Inappropriate technique charts are posted which causes the wrong techniques to be used and increases the number of repeat exposures in eleven (11) percent of facilities. On inspections it is not unusual to find a high frequency generator where rare earth screens are used, green sensitive film is used, and a 10:1 grid is in the table or wall mounted cassette holder. But the facility has posted a technique chart for a single-phase full wave generator using blue tungstate screens and blue sensitive film with an 8:1 grid. There is no way that the posted techniques would work with the system they are using.

Twenty seven percent (27%) of facilities conduct no radiation safety in-service training, or require continuing education for their operators. This is not currently required in the regulations yet many new developments affect even older facilities that have not changed their procedures or equipment in may years. Occupational exposure limits have been

lowered, biological effects have been found to occur at lower exposures than previously believe, and some standard procedures have been found to be ineffective. This error is not correctable using automated x-ray machines.*

Thirteen (13) facilities failed to demonstrate evidence of collimation of the x-ray beam. Biological effects are directly related to the size and volume of tissue exposed and irradiation of large areas of the body, especially body parts that extend beyond the size of the film, causes unnecessary exposure to adjacent anatomical organs (including reproductive organs). In addition, when larger amounts of tissue are irradiated scatter is increased which diminishes image contrast and diagnostic quality. A missed diagnosis can result from excessive scatter. Operators increase their exposure to scatter when more scatter is produced. This error is not corrected by using automated x-ray machines.*

Seven (7) facilities were found to be routinely holding patients during exposures instead of using immobilizing devices or a family member. For the patient, and family member, the procedure may be a one-time event, but for operators who routinely do this it is a cumulative exposure to them. The primary source of radiation exposure to operators is scatter from the patient, and the primary beam is one thousand (1000) times greater than scatter radiation at one meter from the patient. This amounts to a considerable exposure to operators.*

Numerous failures occur that are not quantifiable in terms of exposure received or excess dollars spent.
Examples include failure to post a CAUTION RADIATION sign on a door, which creates the potential for a visitor or patient to inadvertently enter the room while x-rays are present, as they seek a restroom or exit.

Those items marked with an asterisk (*) are important historically as they related to a study performed by the University of Minnesota which found that operators of medical x-ray machines had three times the breast cancer rate of the general public. This applied only to those who practiced up through the 1940's and into the 1950's, but no longer applies nationally due to improvements in methods and procedures. The items marked with an asterisk and found in Alaska represent those practices that have changed nationally, but persist in Alaska. In other words, while breast cancer is not shown to exist at a higher rate among operators using newer procedures (thirty-nine states require formal training of operators) in Alaska many of the same conditions that contributed to that problem in the 1950's still exists. These include using excessive x-ray beam sizes, low energy/high quantity exposure techniques, no processing quality control program, no repeat analysis, operators x-raying each other, operators routinely holding patients during exposures, inappropriate use of fluoroscopy, and lack of appropriate technique charts.

FURTHER COMMENTS:

Every state has radiation control regulations which recognize that although there is great value in using ionizing x-rays it can be hazardous to patients and operators if not used wisely. The National Institute of Environmental Sciences has formally re-affirmed in 2005 that x-radiation is a carcinogen.

New study results, presented by continuing education offerings in Alaska in 2005, revealed that the National Institutes of Health subcommittee, Biological Effects of Ionizing Radiation (BEIR) discovered greater biological effects from x-rays than had been believed previously. This resulted in the US Nuclear Regulatory Commission, and most states, adopting lower occupational exposure limits for operators. Alaska's current Radiation Control regulations do not reflect this new research finding.

Proper use of lead shielding can reduce exposures to reproductive organs as much as 95% if used, according to NCRP Report 34, and ICRP Report 16. If not used, of course, exposures are correspondingly higher than necessary.

A nationwide study still in process is being conducted by the Radiological Health Program to evaluate four questions:

1. After implementation of the requirement for operators of medical x-ray equipment to be formally traine[illegible] your state did you experience a significant reduction of available qu[illegible] rators?
2. After implementation of [illegible] requirement for operators of medical x-ray equipment to be formally trained in your state was there an increase in the salaries (therefore cost) of imaging services due to tighter restrictions?
3. After implementation of the requirement for operators of medical x-ray equipment to be formally trained in your state were there any offices, clinics, or hospitals closed as a result of restrictions on who could operate the x-ray equipment?
4. After implementation of the requirement for operators of medical x-ray equipment to be formally trained in your state were there any instances of limited or loss of access by patients to vitally needed imaging services?

To date, every response received has indicated none of these effects occurred in a state. Two states, California and Michigan indicated that there were cost savings that resulted from increased efficiencies brought about by requiring operators to know what they were doing.

Last year there were two reports on the effects of diagnostic x-rays which indicated that a percentage of cancers were caused by diagnostic x-rays, and that diagnostic exposure levels as seen in Alaska were shown to reduce intellectual capacity of men exposed as infants in Sweden. I will look up the details on percentages and researcher if this would be helpful. I believe the percentages were that 5% of all cancers were due to diagnostic x-rays, and 1% of diagnostic x-rays resulted in cancer... two different ways of looking at the same data.

Breast cancer is now detected much earlier than was the case prior to the federal mammography regulations which began in 1994, which requires extensive formal training of operators, and it has demonstrated clearly that lives are saved because of the required higher level of competency. While it is less obvious that other healthcare imaging procedures necessarily save lives there is abundant scientific evidence that radiation is a carcinogen and a measurable portion of cancers are caused by x-rays. What is less clear is what proportion of those cancers caused by x-rays lead to disfiguring or death. National standards imposed on mammographers in Alaska are analogous to a form of "licensure" already in effect to a restricted segment of operators of x-ray machines. Federal law prohibits anyone performing this procedure who has not completed a formal two-year program, passed a national examination, and also completed forty hours of formal training and supervised clinical experience in mammography. The latent period between radiation exposure and disease make it less obvious when a cancer is caused by the radiation. However, international research has confirmed repeatedly that there is that connection. By analogy, there is no doubt that the Holocaust in Europe occurred even though most people alive today did not personally see it. Similarly, there is no doubt that radiation abuse causes cancer, even when most people do not actually see those cases. There is also no doubt that radiation abuse occurs in Alaska, and lack of formal training in how to use it correctly is a major factor in that abuse.

From: Pearce, Clyde E [mailto:Clyde_Pearce@health.state.ak.us]
Sent: Monday, January 23, 2006 1:59 PM
To: Heath Hilyard
Subject: Costs - Another perspective FYI

Concerns have been raised about the costs of healthcare and how they might rise if operators of x-ray equipment in Alaska are required to be formally trained in how to use it safely. Although these concerns have been addressed in other communications, it is important to also consider the costs of not requiring formal training of operators. The belief that implementation might negatively impact costs, while ignoring that failure to implement has cost implications needs to be addressed. In other words, whether or not HB 150 passes there are cost considerations. There is no free lunch.

In any business the public is served by offering a product or service, and in exchange that public agrees to pay for the product or service offered if they want to have it. There is an implied obligation on the part of the seller that the product or service is useful and safe. The customer expects usefulness and safety. People only eat in restaurants where they perceive the food is safe to eat. They buy clothing that they expect will be useable for a reasonable period of time. We expect the cars, computers, tires, clothes driers and other technology to operate as advertised and to do so without causing a fire or the emission of dangerous fumes in our homes. When we visit a healthcare practitioner we expect to receive care that is competent and safe. We do not wish to spend money on methods or procedures that provide no benefit.

In order for a business to provide useful and safe products there are certain actions they must take, some of which [illegible] the seller money. There are procedures for cleaning pots and pans, to make them sa[illegible] the preparation of food. If the cook drops a steak on the floor it should not be fed to a c[illegible]tomer, so it becomes a useless expense to the vendor. If a vehicle gas tank explodes on impact or a tire fails at high speed the vendor must make good on any sales already made to customers, and discontinue selling that product until the problem is fix[illegible] This represents a cost to the manufacturer, and part of the cost of operation. If a m[illegible]facturer or vendor is unable or unwilling to pay the costs to provide a safe and useful product they should not be allowed to continue in that business. What usually happens is that they meet the basic costs of doing business, and pass that cost on to customers so that they continue to earn sufficient profit to stay in business. The point is, there are costs to conducting business in a safe manner, and those costs must be met whether they are paid directly by the company or indirectly through charges to the customer.

Whenever a person has medical imaging performed in order to address a healthcare concern they likewise expect that the procedure performed will be useful and safe. With radiation it is not as obvious when a procedure is neither useful nor safe, as it would be with a tire that fails or a dryer that causes a fire. Unsafe procedures may cause cancer, but usually not until years after the exposure. Unsafe procedures can cause radiation burns, cataracts, shortening of lifespan and other adverse health effects. But these all

result after some delay due to the latent nature of radiation. Also, most healthcare practitioners do not have the education or experience to recognize a radiation injury when they see one, so that even when the effects occur people tend not to see them. But the scientific literature abounds with documentation that these effects occur. And they occur at diagnostic levels of exposure. A competent physician has the training to make decisions that weigh the risks against the benefits of exposure. Usually, the benefits and necessity of receiving the procedure out weigh the risks, if we assume the risks are "normal" for that procedure. The normal risks of having a pelvis x-ray are very small, when that procedure is performed using all of the techniques and procedures available to minimize radiation dose and maximize diagnostic quality. However, when exposure doses are several times higher than optimum, or when diagnostic quality is inadequate the risks rise exponentially. At some point the risks exceed the health benefit, and the patient who is fully informed might choose not to have that test performed.

A practitioner who hires a low wage untrained person to perform a complicated procedure, presumably to keep business costs down, appears to be saving money. However, the costs of performing the procedure in a safe manner that is useful (diagnostic) are what they are. An operator who does not know how to perform the procedure safely, cannot recognize non-diagnostic images, and does not know how to correct for errors is not saving the employer money. The costs to assure reasonable safety have been bypassed by the facility, but the costs must be met. So who pays them? It is obviously the patient who pays them. When a facility cuts costs by hiring unqualified staff it is their customers who pay the price of lack of safety. The customer pays every time the procedure must be repeated at a different facility because the first x-ray exam was inadequate. The customer pays every time they are re-exposed because the operator did not use standardized procedures, exposure tables, or quality control methods to insure the procedure was performed correctly the first time. The customer pays every time pathology is missed because the images were inadequate to make a proper diagnosis. The customer pays whenever they develop a radiation related disease such as cancer or catarac[illegible]se safety was not provided. The customer pays whenever proper treatment must [illegible] and pain endured longer because the procedure was not performed corr[illegible] customer pays when the necessary x-ray exam should expose a small part of the[illegible], but a much larger area was exposed because the operator was afraid to restrict the beam since it might "cut-off" some of the image. The customer pays when their unborn baby is exposed to radiation unnecessarily.

And it not just the customer who must pay. An operator of x-ray equipment who does not understand how to perform the procedures correctly is exposing him or her self to a radiological carcinogen at higher levels than if their work was in a non-radiation specialty. When the operator holds a patient without using a lead apron, or repeats exposures which increase their own exposure to scatter radiation, he or she is not acting in their own best health interests. The health of the operator should be a concern for the operator and for their family as well. Every family hopes and expects their parent(s) to work a long and productive life in whatever field they chose. Operators should not bear the costs for radiation abuse because their employer would not assume their responsibility

to insure the operator is fully knowledgeable of their own risks, or facility standards are not designed to minimize those risks to the lowest practical level.

In the end, the facility does not even escape paying the costs of radiation abuse. Informed patients share information, and some will not visit certain facilities because of their reputation. Studies have shown that the costs of requiring fully competent operators can be lower. There is potential waste in how much film, chemicals, and other supplies are used for medical imaging. Those costs increase when exposures are repeated. An x-ray tube that is misused will cost several thousand dollars to replace it, and it can be destroyed in a few exposures if misused. A facility in Alaska that documented film storage exposure incidents showed over four thousand dollars lost in wasted film just from improper use of the darkroom. Missed diagnoses and misdiagnoses are causes for legal action against facilities and staff. How many lost lawsuits does it take to make up the difference between the "cost" of hiring a person with no understanding or crea tials in medical imaging versus a fully trained, tested, and experienced operator?

The bottom line is that there is a cost associated with providing safety. Customers expect safety to be an integral component of their health care. If the facility does not assume responsibility for guaranteeing safety for their customers, that cost is simply passed on directly to the customer. Unfortunately, there is no truth in packaging. Customers of medical imaging services do not usually know when responsibility for their safety has been passed directly to them. Customers of medical imaging services do not know how to even evaluate the safety of the procedures they have. This makes it a moral issue, when the customer is in no position to evaluate their risks it is an essential responsibility of the provider to take those steps necessary to protect their customers, that is, patients. It is unethical to shift that burden to patients based on their ignorance of the principle of caveat emptor in medical imaging.

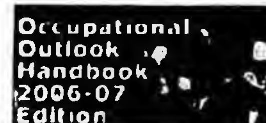
If the provider of health care products or services fails to take that responsibility their services represent fraud. If the provider fails to act responsibility when their services have such profound potential health risks, it becomes necessary for some other entity to step in to advocate for the public. That entity in the case of HB 150 is state government.

U.S. Department of Labor
Bureau of Labor Statistics
Occupational Outlook Handbook

www.bls.gov

Search the *Handbook* GO

BLS Home | OOH Home | Frequently Asked Questions | A-Z Index | Contact Us



Printer-friendly version (HTML)

Radiologic Technologists and Technicians

- Nature of the Work
- Working Conditions
- Training, Other Qualifications, and Advancement
- Employment
- Job Outlook
- Earnings
- Related Occupations
- Sources of Additional Information

SIGNIFICANT POINTS

- Job opportunities are expected to be favorable; some employers report difficulty hiring sufficient numbers of radiologic technologists and technicians.
- Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, an associate degree, or a bachelor's degree.
- Although hospitals will remain the primary employer, a greater number of new jobs will be found in physicians' offices and diagnostic imaging centers.

NATURE OF THE WORK

[About this section] Back to Top

Radiologic technologists and technicians take x rays and administer nonradioactive materials into patients' bloodstreams for diagnostic purposes. Some specialize in diagnostic imaging technologies, such as computerized tomography (CT) and magnetic resonance imaging (MRI).

In addition to radiologic technologists and technicians, others who conduct diagnostic imaging procedures include cardiovascular technologists and technicians, diagnostic medical sonographers, and nuclear medicine technologists. (Each is discussed elsewhere in the *Handbook.)*

Occupations:
Management
Professional
Service
Sales
Administrative
Farming
Construction
Installation
Production
Transportation
Armed Forces

Related Links:
Tomorrow's Jobs
OOH Reprints
Important Info
How to Order a Copy
Teacher's Guide to OOH

Additional Links:
Career Guide to Industries
Career articles from the OOQ
Employment Projections
Publications Home
BLS Home

Radiologic technologists and technicians, also referred to as *radiographers*, produce x-ray films (radiographs) of parts of the human body for use in diagnosing medical problems. They prepare patients for radiologic examinations by explaining the procedure, removing articles such as jewelry, through which x rays cannot pass, and positioning patients so that the parts of the body can be appropriately radiographed. To prevent unnecessary exposure to radiation, these workers surround the exposed area with radiation protection devices, such as lead shields, or limit the size of the x-ray beam. Radiographers position radiographic equipment at the correct angle and height over the appropriate area of a patient's body. Using instruments similar to a measuring tape, they may measure the thickness of the section to be radiographed and set controls on the x-ray machine to produce radiographs of the appropriate density, detail, and contrast. They place the x-ray film under the part of the patient's body to be examined and make the exposure. They then remove the film and develop it.

Experienced radiographers may perform more complex imaging procedures. For fluoroscopies, radiographers prepare a solution of contrast medium for the patient to drink, allowing the radiologist (a physician who interprets radiographs) to see soft tissues in the body. Some radiographers, called *CT technologists,* operate CT scanners to produce cross-sectional images of patients. Radiographers who operate machines that use strong magnets and radio waves, rather than radiation, to create an image are called *MRI technologists*.

Radiologic technologists and technicians must follow physicians' orders precisely and conform to regulations concerning the use of radiation to protect themselves, their patients, and their coworkers from unnecessary exposure.

In addition to preparing patients and operating equipment, radiologic technologists and technicians keep patient records and adjust and maintain equipment. They also may prepare work schedules, evaluate purchases of equipment, or manage a radiology department.

WORKING CONDITIONS

[About this section]

Most full-time radiologic technologists and technicians work about 40 hours a week. They may, however, have evening, weekend, or on-call hours. Opportunities for part-time and shift work also are available.

Physical stamina is important, because technologists and technicians are on their feet for long periods and may lift or turn disabled patients. Technologists and technicians work at diagnostic machines,

but also may perform some procedures at patients' bedsides. Some travel to patients in large vans equipped with sophisticated diagnostic equipment.

Although radiation hazards exist in this occupation, they are minimized by the use of lead aprons, gloves, and other shielding devices, as well as by instruments monitoring exposure to radiation. Technologists and technicians wear badges measuring radiation levels in the radiation area, and detailed records are kept on their cumulative lifetime dose.

TRAINING, OTHER QUALIFICATIONS, AND ADVANCEMENT

[About this section] Back to Top

Preparation for this profession is offered in hospitals, colleges and universities, vocational-technical institutes, and the U.S. Armed Forces. Hospitals, which employ most radiologic technologists and technicians, prefer to hire those with formal training.

Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, an associate degree, or a bachelor's degree. Two-year associate degree programs are most prevalent.

Some 1-year certificate programs are available for experienced radiographers or individuals from other health occupations, such as medical technologists and registered nurses, who want to change fields or specialize in CT or MRI. A bachelor's or master's degree in one of the radiologic technologies is desirable for supervisory, administrative, or teaching positions.

The Joint Review Committee on Education in Radiologic Technology accredits most formal training programs for the field. The committee accredited 606 radiography programs in 2005. Radiography programs require, at a minimum, a high school diploma or the equivalent. High school courses in mathematics, physics, chemistry, and biology are helpful. The programs provide both classroom and clinical instruction in anatomy and physiology, patient care procedures, radiation physics, radiation protection, principles of imaging, medical terminology, positioning of patients, medical ethics, radiobiology, and pathology.

Federal legislation protects the public from the hazards of unnecessary exposure to medical and dental radiation by ensuring that operators of radiologic equipment are properly trained. Under this legislation, the Federal Government sets voluntary standards that the States may use for accrediting training programs and certifying individuals who engage in medical or dental radiography.

In 2005, 38 States certified radiologic technologists and technicians.

Certification, which is voluntary, is offered by the American Registry of Radiologic Technologists. To be eligible for certification, technologists generally must graduate from an accredited program and pass an examination. Many employers prefer to hire certified radiographers. To be recertified, radiographers must complete 24 hours of continuing education every two years.

Radiologic technologists and technicians should be sensitive to patients' physical and psychological needs. They must pay attention to detail, follow instructions, and work as part of a team. In addition, operating complicated equipment requires mechanical ability and manual dexterity.

With experience and additional training, staff technologists may become specialists, performing CT scanning, angiography, and magnetic resonance imaging. Experienced technologists also may be promoted to supervisor, chief radiologic technologist, and, ultimately, department administrator or director. Depending on the institution, courses or a master's degree in business or health administration may be necessary for the director's position. Some technologists progress by leaving the occupation to become instructors or directors in radiologic technology programs; others take jobs as sales representatives or instructors with equipment manufacturers.

EMPLOYMENT [About this section] Back to Top

Radiologic technologists and technicians held about 182,000 jobs in 2004. More than half of all jobs were in hospitals. Most of the rest were in offices of physicians; medical and diagnostic laboratories, including diagnostic imaging centers; and outpatient care centers.

JOB OUTLOOK [About this section] Back to Top

Job opportunities are expected to be favorable. Some employers report difficulty hiring sufficient numbers of radiologic technologists and technicians. Imbalances between the demand for, and supply of, radiologic technologists and technicians should spur efforts to attract and retain qualified workers, such as improved compensation and working conditions. Radiologic technologists who also are experienced in more complex diagnostic imaging procedures, such as CT and MRI, will have better employment opportunities, brought about as employers seek to control costs by using multiskilled employees.

Employment of radiologic technologists and technicians is expected to **grow faster than the average** for all occupations through

2014, as the population grows an ' ages, increas'ng the demand for diagnostic imaging. Although healthcare pro 'iders are enthusiastic about the clinical benefits of new technologies the extent to which they are adopted depends largely on cost and reimbursement considerations. For example, digital imaging technology can improve the quality of the images and the efficiency of the procedure, but remains expensive. Some promising new technologies may not come into widespread use because they are too expensive and third-party payers may not be willing to pay for their use.

Hospi ' will remain the principal employer of radiologic technol ts and technicians. However, a greater number of new jobs will b found in offices of physicians and diagnostic imaging centers. Health facilities such as these are expected to grow rapidly through 2014, due to the strong shift toward outpatient care, encouraged by third-party payers and made possible by technological advances that permit more procedures to be performed outside the hospital. Some job openings also will arise from the need to replace technologists and technicians who leave the occupation.

EARNINGS [About this section] Back to Top

Median annual earnings of radiologic technologists and technicians were $43,350 in May 2004. The middle 50 percent earned between $36,170 and $52,430. The lowest 10 percent earned less than $30,020, and the highest 10 percent earned more than $60,210. Median annual earnings in the industries employing the largest numbers of radiologic technologists and technicians in May 2004 were:

Medical and diagnostic laboratories	$46,620
General medical and surgical hospitals	43,960
Offices of physicians	40,?90

RELATED OCCUPATIONS [About this section] Back to Top

Radiologic technologists and technicians operate sophisticated equipment to help physicians, dentists, and other health practitioners diagnose and treat patients. Workers in related occupations include **cardiovascular technologists and technicians**, **clinical laboratory technologists and technicians**, **diagnostic medical sonographers**, **nuclear medicine technologists**, **radiation therapists**, and **respiratory therapists**.

SOURCES OF ADDITIONAL INFORMATION [About this section] Back to Top

DISCLAIMER:
Links to non-BLS Internet sites are provided for your convenience and do not constitute an endorsement.

For career information, send a stamped, self-addressed business-size envelope with your request to:

- American Society of Radiologic Technologists, 15000 Central Ave. S.E., Albuquerque, NM 87123-3917. Internet: **http://www.asrt.org**

For the current list of accredited education programs in radiography, write to:

- Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Dr., Suite 2850, Chicago, IL 60606-3182. Internet: **http://www.jrcert.org**

For information on certification, contact:

- American Registry of Radiologic Technologists, 1255 Northland Dr., St. Paul, MN 55120-1155. Internet: **http://www.arrt.org**

OOH ONET CODES [About this section] Back to Top

29-2034.01, 29-2034.02

Suggested citation: Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2006-07 Edition*, Radiologic Technologists and Technicians, on the Internet at **http://www.bls.gov/oco/ocos105.htm** (visited *January 30, 2006*).

Last Modified Date: December 20, 2005

Occupations: Management | Professional | Service | Sales | Administrative | Farming | Construction | Installation | Production | Transportation | Armed Forces

Related Links: Tomorrow's Jobs | OOH Reprints | Important Info | How to Order a Copy | Teacher's Guide to OOH

Additional Links: Career Guide to Industries | Career articles from the OOQ | Employment Projections | Publications Home | BLS Home

Back to Top www.dol.gov

Frequently Asked Questions | Freedom of Information Act | Customer Survey
Privacy & Security Statement | Linking to Our Site | Accessibility

U.S. Bureau of Labor Statistics
Office of Occupational Statistics and Employment Projections
Suite 2135
2 Massachusetts Avenue, NE
Washington, DC 20212-0001

URL: **http://www.bls.gov/OCO/**
Phone: (202) 691-5700
Fax: (202) 691-5745
Do you have a question about the *Occupational Outlook Handbook*?
Technical (web) questions: **webmaster@bls.gov**
Other comments: **feedback@bls.gov**

>

United States Office of Personnel Management

Operating Manual

Qualification Standards for General Schedule Positions

Individual Occupational Requirements for

GS-647: Diagnostic Radiologic Technologist Series

The text below is extracted verbatim from Section IV-B of the Operating Manual for Qualification Standards for General Schedule Positions (p.IV-B-105), but contains minor edits to conform to web-page requirements.

Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."

NOTE: Public Law 97-35 requires that persons who administer radiologic procedures meet the credentialing standards in 42 CFR Part 75. Essentially, they must (1) have successfully completed an educational program that meets or exceeds the standards described in that regulation, and is accredited by an organization recognized by the Department of Education, and (2) be certified as radiographers in their field. The following meet these requirements:

(1) Persons employed by the Federal Government as radiologic personnel prior to the effective date of the regulation (January 13, 1986) who show evidence of current or fully satisfactory performance or certification of such from a licensed practitioner such as a doctor of medicine, osteopathy, dentistry, podiatry, or chiropractic who prescribes radiologic procedures to others.
(2) Persons first employed by the Federal Government as radiologic personnel after the effective date of the regulation who (a) received training from institutions in a State or foreign jurisdiction that did not accredit training in that particular field at the time of graduation, or (b) practiced in a State or foreign jurisdiction that did not license that particular field or did not allow special eligibility to take a licensure examination for those who did

not graduate from an accredited educational program, provided that such persons show evidence of training, experience, and competence as determined by OPM or the employing agency.

All applicants, however, must meet the requirements below.

Specialized Experience (for positions at GS-4 and above): Experience in the operation of diagnostic radiology equipment under the direction of radiologists or other medical officers to produce radiographic studies used in medical diagnosis and treatment.

OR

Education and Training: Qualifying educational programs for radiography and radiation therapy technology are available in accredited colleges, universities, hospitals, medical schools, or postsecondary technical or vocational schools. Education or training from programs based in hospitals must have been from those hospitals that were accredited at the time of the education or training by the Joint Commission on Accreditation of Hospitals or by the American Osteopathic Association.

For GS-3:	Successful completion of (a) 1 year of study with at least 6 semester hours in any combination of the following: anatomy, biology, mathematics, chemistry, radiation physics, physiology, pathology, medical terminology, or related courses, or (b) a course for medical technicians, hospital corpsmen, medical service specialists, or hospital training obtained in a training program given by the Armed Forces or the U.S. Maritime Service under close medical and professional supervision.
For GS-4:	Successful completion of a full-time training course of at least 12 months' duration in a post-high school radiography program.
For GS-5:	Successful completion of a full-time training course of at least 24 months' duration in a post-high school radiography program.

Successful completion of a course for medical radiologic technicians in the Armed Forces is qualifying on a month-for-month basis up to the 1 year of specialized experience required for GS-5.

- To Top of This Page
- To Qualifications Standards Front Page
- To OPM Web Site Index
- To OPM Home Page

Page created 22 March 1999

>

United States Office of Personnel Management

Operating Manual

Qualification Standards for General Schedule Positions

Individual Occupational Requirements for

GS-648: Therapeutic Radiologic Technologist Series

The text below is extracted verbatim from Section IV-B of the Operating Manual for Qualification Standards for General Schedule Positions (p.IV-B-106), but contains minor edits to conform to web-page requirements.

Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."

NOTE: Public Law 97-35 requires that persons who administer radiologic procedures meet the credentialing standards in 42 CFR Part 75. Essentially, they must (1) have successfully completed an educational program that meets or exceeds the standards described in that regulation, and is accredited by an organization recognized by the Department of Education, and (2) be certified as radiographers in their field. The following meet these requirements:

(1) Persons employed by the Federal Government as radiologic personnel prior to the effective date of the regulation (January 13, 1986) who show evidence of current or fully satisfactory performance or certification of such from a licensed practitioner such as a doctor of medicine, osteopathy, dentistry, podiatry, or chiropractic who prescribes radiologic procedures to others.
(2) Persons first employed by the Federal Government as radiologic personnel after the effective date of the regulation who (a) received training from institutions in a State or foreign jurisdiction that did not accredit training in that particular field at the time of graduation, or (b) practiced in a State or foreign jurisdiction that did not license that particular field or did not allow special eligibility to take a licensure examination for those who did

not graduate from an accredited educational program, provided that such persons show evidence of training, experience, and competence as determined by OPM or the employing agency.

All applicants, however, must meet the requirements below.

Specialized Experience (for positions at GS-4 and above): Experience in the operation of therapeutic radiology equipment under the direction of radiotherapists or other medical officers.

OR

Education and Training: Qualifying educational programs for radiography and radiation therapy technology are available in accredited colleges, universities, hospitals, medical schools, or postsecondary technical or vocational schools. Education or training from programs based in hospitals must have been from those hospitals that were accredited at the time of the education or training by the Joint Commission on Accreditation of Hospitals or by the American Osteopathic Association.

For GS-3:	Successful completion of (a) 1 year of study with at least 6 semester hours in any combination of the following: anatomy, biology, mathematics, chemistry, radiation physics, physiology, pathology, medical terminology, or related courses, or (b) a course for medical technicians, hospital corpsmen, medical service specialists, or hospital training obtained in a training program given by the Armed Forces or the U.S. Maritime Service under close medical and professional supervision.
For GS-4:	Successful completion of a full-time training course of at least 12 months' duration in a post-high school radiation therapy technology program.
For GS-5:	Successful completion of the following type of education or training qualifies for the GS-5 level: (a) a full-time training course in radiation therapy technology of at least 24 months' duration in a post-high school program (may be a 2-year junior college or a 2-year certificate program); or (b) a full-time course of study in radiation therapy technology of at least 12 months' duration in a post-high school program. (Applicants qualifying under (b) must have entered the 1-year certificate program upon completion of a radiography program, a registered nurse program, or upon completion of equivalent course work or training that was accepted as a prerequisite for entry into the radiation therapy technology program); or (c) a 4-year baccalaureate degree program in radiologic technology. Successful completion of a course for therapeutic radiologic technicians in the Armed Forces is qualifying on a month-for-month basis up to the 1 year of specialized experience required for GS-5.

- To Top of This Page

- To Qualifications Standards Front Page
- To OPM Web Site Index
- To OPM Home Page

Page created 22 March 1999

Alaska State Medical Association

4107 Laurel Street • Anchorage, Alaska 99508 • (907) 562-0304 • (907) 561-2063 (fax)

April 4, 2005

Honorable Lesil McGuire
Alaska House of Representatives
State Capitol, Juneau, AK 99801

Re: HB 150, Licensure of Radiologic Technologists

Dear Representative McGuire:

The Alaska State Medical Association represents physicians statewide and is primarily concerned with the quality of healthcare Alaskans receive. ASMA has a tradition of supporting legislation that improves the safety and quality of medical care available in the state.

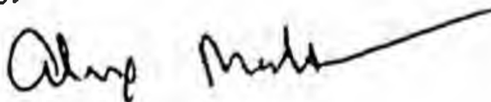
HB 150 provides for licensure of radiologic technicians by completion of a new training program. ASMA understands that better training could improve healthcare quality in some instances. Still, we have heard from doctors across the state that the legislation would likely reduce access to x-rays in many clinics, making it more difficult to diagnose certain ill patients. ASMA is concerned that overall, the unintended consequences of HB 150 could outweigh the potential benefits.

Historically, small or rural clinics have trained their staffs to take limited types of uncomplicated x-rays. X-ray volume in these practices is often low, in many cases insufficient to justify the cost and time needed to train technologists as proposed. Some practices will stop offering x-rays. This will make it more difficult for rural clinicians to "rule-out" serious conditions such as pneumonia or hip fractures. Time and costs for medical treatment in larger cities could also increase.

Please remember that doctors are already legally responsible for their employees' acts and are quite motivated to ensure their staffs provide safe, high-quality care. ASMA is not aware of any Alaskan physicians who have been found liable for bad outcomes related to unsafe or low quality x-rays.

A preferable legislative solution would be to provide a registration system (rather than licensure) for those technicians taking x-rays who are employed by physicians. This would still allow for State oversight, yet not lead small and rural clinics to reduce x-ray services. For better or worse, Alaska is different than other states.

Sincerely,



Alex Malter, MD, MPH
Immediate Past President

cc: House Judiciary Committee Members

(PHONE 745-1763)

William W. Resinger, M.D.
P.O. Box 839
Palmer, AK 99645

~~March 30, 2005~~ 2/13/06 -(wwR)

Testimony regarding HB 150

FINANCE -(wwR)

To: The House ~~Judiciary~~ Committee
Alaska Legislature
Juneau, AK

I am a radiologist who has practiced in Alaska since 1984. I wish to speak in support of House Bill 150.

My years of experience in radiology have given me insight into the usefulness and the risks of medical imaging. There is always a balance between the benefits and the risks of employing ionizing radiation for medical diagnosis. Education and experience are needed to maintain this balance.

Safely producing diagnostically useful images requires knowledge of such subjects as radiation protection, anatomy, positioning, exposure factors, indications for the exam, and function of the radiographic equipment. A "limited radiographic imager" described in the bill should have the basic training and experience which the bill proposes. HB 150 is not designed to burden medical providers unnecessarily, but rather to assure that minimum standards of safety and quality are met.

As a radiologist, I would not consider myself to be the most appropriate person to train or supervise medical personnel in modern medical therapy or surgery. Likewise, while I realize that many specialists are very competent radiographically in their discipline, I would not expect that physicians in general would be the most expert in training or supervising medical imagers. I am aware that humility is not a defining characteristic of my profession, but I would suggest that the colleagues I have admired most are those who understood their limits, staying within their sphere of expertise and refraining from other areas.

My pastor often reminds me that a "blind spot" is just what it says, a problem which one cannot see. This analogy is appropriate to radiology which is a very visual specialty. If I miss an abnormality on a radiograph, that finding becomes a "blind spot" for me. Radiographic diagnosis requires visual perception, even when viewing the best quality image or the most uncomplicated image.

Radiologists are constantly fine tuning their perceptive skills in order to reduce missed diagnoses or misinterpretations. In our practice my radiologist partners have detected my "blind spots" and I have done the same for them. I am not demeaning other physicians, but, as part of my day to day work, I have occasionally found abnormalities missed on radiographs performed in remote areas or offices. Sometimes the problem lies in the quality of the images. Even the simplest image of a finger can demonstrate a subtle [illegible]nality which suggests a serious systemic disease, if the quality is sufficient.

In many aspects of medicine we now required to comply with national standards , such as the production and interpretation of mammograms. I know personally that compliance can be burdensome, but when the criteria are reasonable I accept the extra effort necessary to improve the standard of care.

I have been told that 41 other states already have provisions similar to HB 150 enacted into law. So far as I can see the proposed requirements are reasonable and they should result [illegible] a beneficial effect. I believe that this bill will help to reduce "blind spots' in Alaska's medical imaging community.

William W. Resinger, MD

This story is taken from Politics at sacbee.com.

Limiting X-ray exposure

Medical X-ray toxicity is a hot topic among scientists. Assemblywoman Jenny Oropeza hopes her legislation can reduce unnecessary radiation for patients.

By Edie Lau -- Bee Science Writer
Published 2:15 am PST Saturday, December 24, 2005

One in a series of reports on new laws that take effect in the new year.

Her bout with cancer last year caused Assemblywoman Jenny Oropeza to think about the many things that damage cells in the body. Her exploration led her to something that many people think of as strictly helpful, not harmful, to their health: medical X-rays.

"Virtually everybody gets X-rays," Oropeza said. "And you know, we don't really give it a thought."

As a California lawmaker, Oropeza is in a position to try to change that. The Long Beach Democrat has taken what she hopes is a first step with the passage this year of Assembly Bill 929, the California Radiation Exposure Information Act.

The law, which takes effect Jan. 1, requires the state Department of Health Services to develop mandatory quality-assurance standards for all radiological equipment in California to ensure the lowest possible dose of radiation without sacrificing image quality.

The issue of medical X-ray toxicity was a hot topic in science circles in 2005. Early in the year, the National Toxicology Program - a part of the National Institute on Environmental Health Sciences - announced it had added X-radiation and gamma radiation to the nation's official list of known human carcinogens.

In June, the National Research Council completed a five-year study of the biological effects of exposure to low levels of ionizing radiation.

The study found that even the smallest exposure is likely to cause a small increase in health risk to humans.

Oropeza and her staff in the Assembly looked into the subject. They discovered that while the state has quality-assurance guidelines for users of medical radiological equipment, abiding by the standards wasn't required.

The one exception is mammography. A 1992 federal law set mandatory standards for

mammography involving credentialing of personnel and equipment maintenance.

So, while the tools of mammography must be inspected annually, other radiological equipment is examined by the state much less frequently.

According to Kevin Reilly, deputy director of prevention services at the state health department, equipment used in hospitals is considered by state law to be the highest priority. It must be inspected once every three years.

Equipment considered "medium priority" must be inspected every 4 1/4 years. Dental equipment is in its own category. Sources of radiation used in dentistry must be screened for defects by mail at least once every five years on average. Half of the dental equipment must be physically inspected at least once every six years on average.

While scientists and lawmakers are paying more attention to the potential dark side of medical radiology, no one questions that the tools can and do save lives.

Charles Meyers will speak to that. Meyers had a computed tomography (CT) scan of his left foot on Tuesday after he fell off a ladder and ended up at Mercy General Hospital's emergency room with what he suspected was a broken heel.

It was the second CT scan he's had recently, and he didn't worry for a moment about the radiation exposure.

"Two years ago, I had a CT scan on my lungs," said Meyers, a former Sacramento resident who was back in town visiting a frie[illegible]. "Without it, I wouldn't have known I had clots in my lungs. It was definitely a life-sa[illegible]ure."

Oropeza said her concern is not [illegible]ocedures that are medically necessary. Her target is the stuff that's unnecessary.

An example, she said, are full-body CT scans. "It's really popular with your younger (to) middle-aged, upwardly mobile people. They view it as a preventive thing where they go in, they pay 1,000 bucks or something ... and put a full-body scan on them that's totally unnecessary," she said.

The same trend prompted the National Toxicology Program to look into the health effects of radiation, an act that led it to add X-rays and gamma rays to the list - now 58 items long - of known human carcinogens.

"People were beginning to use more and more of these CT scans, which are equivalent to 100 to 400 X-rays at one shot," said Christopher Portier, associate director of the National Toxicology Program. "... That might not be a risk-free exercise, and people need to be reminded of that."

Lorenza Clausen, a radiology technologist at Mercy General, said the public should understand that even medically necessary procedures can result in significant exposure to radiation, too - exposure that she said can be reduced with training of medical personnel.

The use of fluoroscopy is an example. A form of real-time imaging that involves radiation, fluoroscopy is used increasingly in the treatment of heart problems, Clausen said. The imaging can enable a doctor to relieve blockage by inserting a stent into the clogged artery, thereby avoiding open-heart surgery.

Avoiding open-heart surgery is a good thing, of course, but the fluoroscopy is not benign, Clausen said. And a less-skilled physician might unwittingly expose a patient - along with everyone else in the room - to more radiation than is necessary.

"I've heard of (exposures) of 20 and 40 minutes at a time," she said. "That's a lot."

Reilly at the state health department said it's not clear whether rules that result from the new law will require that patient exposures are measured. The department is drafting regulations, which will be aired for public comment before going into effect by January 2008.

Oropeza said she is mindful of the need for individuals to keep better track of their medical radiation exposures. She considered legislation to require that radiation records be kept for patients, similar to vaccination records, but said the logistics were too complicated to work out during the legislative session. Oropeza may resurrect the idea.

"We're going to look at other ways of educating people to be more aware about especially unnecessary exposure," she said.

NEW LAW AT A GLANCE

Assembly Bill 929, the California Radiation Exposure Information Act, requires the state Department of Health Services to develop mandatory quality-assurance standards for all radiological equipment in California to ensure the lowest possible dose of radiation.

About the writer:

- The Bee's Edie Lau can be reached at (916) 321-1098 or elau@sacbee.com.

Go to: Sacbee / Back to story

This article is protected by copyright and should not be printed or distributed for anything except personal use.
The Sacramento Bee, 2100 Q St., P.O. Box 15779, Sacramento, CA 95852
Phone: (916) 321-1000

Copyright © The Sacramento Bee

UNIVERSITY OF CALIFORNIA, BERKELEY

Public Affairs, (510) 642-3734

NEWS RELEASE, 11/16/99

Radiation expert warns of danger from overuse of medical X-rays, claiming they're responsible for many cancer and heart disease deaths

By Robert Sanders, Public Affairs

- BERKELEY-- A noted University of California, Berkeley, expert on the health effects of radiation has concluded that a large proportion of deaths today from cancer and heart disease are due in part to past exposure to medical radiation.

John W. Gofman, professor emeritus of molecular and cell biology at UC Berkeley, conducted an intensive analysis comparing death rates in each of the country's nine census divisions with the average number of physicians per 100,000 people in these divisions.

The analysis turned up a major surprise. While death rates from almost all causes went down with increasing physician density, death rates rose with physician density in two categories: cancer and ischemic heart disease, also known as coronary heart disease.

Gofman, who for decades has warned of the dangers of low-level radiation, concluded that the cause is medical X-rays, including fluoroscopy and computed tomography or CT scans. The analysis and conclusions are published this week in a 700-page monograph by the book division of the Committee for Nuclear Responsibility, Inc., a non-profit, public interest association Gofman founded in 1971.

"This is a serious public health problem," Gofman said. "We're talking about the two biggest causes of death in this country - cancer and heart disease - which together amount to 45 percent of all deaths. Medical X-rays are a major cause of these deaths."

Gofman does not discount the role of other factors in these diseases, including diet and smoking, but maintains that more than half the deaths from cancer and heart disease would not have occurred but for medical X-rays.

He also acknowledges the value of X-rays in diagnosis and to monitor medical treatment. Nevertheless, he urges physicians to be careful of unnecessarily high doses of X-rays, and to advise patients of the pros and cons of X-rays, much as they alert patients to the possible side effects of drugs.

"My findings are not going to cause patients to reject the obvious benefits of medical X-rays," Gofman said. "People are smart. Very soon, patients may insist on seeing some evidence that they will receive the lowest possible X-ray doses."

He also urges radiologists to reduce radiation doses delivered in standard procedures, and in his

study lists examples of how some hospitals and doctors have done this.

"These findings point to a safe and painless way to achieve big reductions in mortality from our two biggest killers, cancer and coronary heart disease," he said. "Reduce X-ray dosages, since the benefits of an X-ray can be obtained at much lower levels.

"When X-ray doses for mammograms were reduced tenfold, women began receiving the benefits with only one-tenth the former risk of getting cancer," added Gofman, who in 1995 published a study that ascribed 75 percent of breast cancer cases to past exposure from medical radiation. "But for many, many other X-ray procedures, the effort to achieve a tenfold reduction in dosage has not been made yet."

The problem, he argues, is an almost casual use of X-rays in the past. Through the 1940s, X-ray dosages often were 50 to 100 times those used today. Even as recently as the 1960s, mammograms sometimes delivered more than 100 times today's maximum allowed radiation dose. X-rays also were widely used for procedures doctors now know were unnecessary, such as routine X-rays during pediatric well-baby exams.

Though radiation doses have declined in many medical procedures, a proliferation of new uses of diagnostic and interventional radiation threatens to keep cumulative doses high, and thereby contribute to a higher mortality from heart disease and cancer, he said. What makes the situation even more alarming is that few physicians monitor the cumulative doses their patients get.

"There is the assumption that, at these doses, radiation doesn't make a significant contribution," he said. "But X-rays are very potent mutagens, even at low doses. It's a disaster that people still believe the 'safe dose myth,' that low doses are harmless."

Gofman, 81, has had a distinguished career in several fields, ranging from nuclear physics and lipoprotein research - he was the first to show that high levels of low-density lipoproteins, or LDLs, were a risk factor for atherosclerosis - to the health effects of radiation.

He began his recent analysis by using a huge census database that lists cause of death per age group within the country's nine census divisions, covering the entire population from 1940 to 1990.

He wanted to compare the death rates with estimates of the amount of medical radiation received on average by the population, but no such data exists. He therefore used a surrogate statistic: the number of physicians per 100,000 population, amassed over the years by the American Medical Association. He reasoned that since physicians prescribe X-rays, the number prescribed should be roughly proportional to the number of doctors serving the population.

Using regression analysis, he found that age-adjusted death rates for all types of cancer combined, and for ischemic heart disease by itself, rose with the number of physicians per 100,000 population in the census divisions. Conversely, all other diseases, when lumped together, showed a drop in the death rate as physician density rose. This held true in all age ranges.

Gofman argues that the correlation implies that death rates for cancer and heart disease have gone up as the number of medical procedures requiring radiation has gone up. Specifically, the study concludes that over 50 percent of the death rate from cancer today, and over 60 percent of today's

death rate from ischemic heart disease, are induced by X-rays in combination with other factors.

"Prior to 1940, no medical exam was considered complete without X-ray procedures, generally including fluoroscopy where the X-ray beam stays on," he said. "In fact, X-ray exposure began even in the womb for many people who are now age 30 and over, because until 1970, about one birth in every 14 was preceded by pelvic X-rays of the mother shortly before delivery, to measure the birth canal."

He discounts other explanations for the correlation, such as urbanization, differences in autopsy rates, different rates of reporting cancer deaths, and the possibility that chemotherapy for cancer could have caused some of the ischemic heart disease.

Though it is not surprising that cancer rates go up with the number of medical X-rays, Gofman was surprised to find a similar situation with ischemic heart disease, even though he was aware of studies that suggest atherosclerotic plaques in the arteries can be stimulated by chemical mutagens.

"It has been known for decades that high doses of radiation injure or kill the heart and blood vessels," Gofman said. "This study is abo low and moderate doses accumulated over time. Each dose, no matter how low, produces mutations, so by the time you're 50, all of these events have added to the mutation load in your cells."

Fluoroscopies in particular are a major source of radiation today, he said, because the beam stays on during the procedure, such as threading a catheter or endoscope. The total dose can easily be reduced, he said, by using the fluoroscope only periodically, not continually.

"This makes good sense for doctors and their patients," he said. "We must reduce the amount of radiation patients get, and measure it to make sure we're right."

The study was funded by numerous small gifts from individuals and private foundations.

###

This server has been established by the University of California at Berkeley Public Information Office. Copyright for all items on this server held by The Regents of the University of California. Thanks for your interest in UC Berkeley.

More Press Releases | More Campus News and Events | UC Berkeley Home Page

Send comments to: comments@pa.urel.berkeley.edu