

VA SCHOOL OF RADIOLOGIC  
TECHNOLOGY

VETERANS AFFAIRS HEALTH CARE SYSTEM  
MINNEAPOLIS, MN

PROGRAM POLICY HANDBOOK  
2024 – 2026

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### ***Program Mission Statement***

It is the mission of the Minneapolis VA Health Care System (VAHCS), School of Radiologic Technology to educate radiologic technologists who recognize patient needs, who hold the skills, knowledge and attitudes required for safe, diagnostic radiology, and who are registry eligible upon program completion.

### ***Purpose***

The purpose of the Minneapolis VA Health Care System, School of Radiologic Technology is to prepare graduates with entry-level skills, knowledge and attitudes of a staff technologist through successful completion of clinical and academic objectives.

### ***Goals/Outcomes***

*Goal 1: Graduates will demonstrate clinical competence.*

- Outcome 1: Students will select appropriate technical factors.
- Outcome 2: Students will demonstrate accurate positioning skills.

*Goal 2: Graduates will demonstrate critical thinking skills.*

- Outcome 1: Students will demonstrate adjustment to individual circumstances in acquiring quality radiographic images.
- Outcome 2: Students will critique images for anatomic and radiographic quality.

*Goal 3: Graduates will demonstrate effective communication skills.*

- Outcome 1: Students will demonstrate effective written communication.
- Outcome 2: Students will demonstrate effective verbal communication.

### ***Accreditation***

The Joint Review Commission on Education in Radiologic Technology (JRCERT) accredits the VAHCS Radiologic Technology Program. Graduates are eligible to take the American Registry for Radiologic Technologists (ARRT) Examination. Upon successful completion of this exam, graduates become Registered Technologists in Radiography (RT(R)). This certification is the nationally accepted standard for the profession.

Questions or comments regarding compliance with the Joint Review Committee on Education in Radiologic Technology (JRCERT) Standards by the Minneapolis VA Healthcare Systems – School of Radiologic Technology should be directed to:

The Joint Review Committee on Education in Radiologic Technology (JRCERT)  
20 North Wacker Drive, Suite 2850  
Chicago, Illinois 60606-3182  
Tel: 312-704-5300  
Fax: 312-704-5304

[mail@jrecert.org](mailto:mail@jrecert.org) [www.jrcert.org](http://www.jrcert.org)

*Students may not be assigned to clinical settings on holidays that are observed by the sponsoring institutions. Please see the following Academic Calendar and Holidays.*

### **Academic Calendar**

Labor Day off: September 2, 2024  
Start of School: September 3, 2024,  
Program Orientation: 9/3/2023 – 9/6/2024  
HR In-Processing: 9/9/2024  
New Employee Orientation: 9/25/2024  
First Quarter: 9/3/24 - 11/22/2024  
Columbus Day/Indigenous People Day off: October 14, 2024  
Veterans Day off: November 11, 2024  
Thanksgiving off: November 28-29, 2024  
Second Quarter: 12/2/2024 - 2/21/2025  
Winter Break off: December 21<sup>st</sup>, 2024 – January 5<sup>th</sup>, 2025  
Christmas off: December 25, 2024  
New Year's Day off: January 1, 2025  
Martin Luther King's Day off: January 20, 2025  
Presidents Day off: February 17, 2025  
Third Quarter: 3/3/2024 - 5/23/2025  
Memorial Day off: May 26, 2025  
Fourth Quarter: 6/2/24 - 8/22/2025  
Juneteenth off: June 19, 2025  
Independence Day off: July 4, 2025  
Graduation: August 15, 2025  
Labor Day off: September 1, 2025  
Fifth Quarter: 9/1/2025 - 11/21/2025  
Sixth Quarter: 12/1/2025 - 2/20/2026  
Seventh Quarter: 3/2/2026 - 5/22/2026  
Eighth Quarter: 6/1/2026 - 8/21/2026

### **Program Completion**

The definition of program completion is the number of students who complete the entire clinical and didactic phase of the program within the stated program length. The program length for the VA School of Radiologic Technology is 24 months and program completions are those students graduating within 24 months of beginning the program.

### ***Admission Procedures***

The Radiography Program at the Veterans Affairs Medical Center is an equal opportunity program. The student selection is non-discriminating with respect to race, color, creed, sex, sexual orientation, age, handicap, or national origin.

The candidate's application materials, personal references and transcripts must be received by the closing date each year. The closing date for the 2025-2026 class is listed on the website. A personal interview is conducted if the applicant meets admission criteria. The program director, clinical coordinator, staff technologist(s) and a student representative from the first and second year will conduct interviews. The selection is based upon the interview process and the following criteria.

#### Criteria for Selection

- Grades: 20%
- Letters of Recommendation: 10%
- Interview Process: 60% (Likert Scale from 1-5)
- Patient Experience: 10%

The selected applicants are notified within two weeks of the interview and are requested to confirm the acceptance within three days. The remaining applicants are notified after the confirmation of the selected applicants. The program reserves the right to select less than the maximum number of ten applicants per year, for a total of 20 students for the program's length of a two-year period.

All applicants must submit to a federal background check for acceptance to the VA Program and a Minnesota State background check. Students may be subject to random drug testing obligations.

### ***Articulation/Affiliation Agreements***

The VA School of Radiologic Technology participates in an articulation agreement with the following Universities.

#### **University Articulation Agreements**

Briar Cliff University  
3303 Rebecca St.  
Sioux City, IA 51104



Minot State University  
500 University Ave W  
Minot, ND 58701

Mount Marty  
1105 W 8th St.  
Yankton, SD, 57078

North Dakota State University  
1340 Administration Avenue  
Fargo, ND 58102

St. Cloud State University  
720 4<sup>th</sup> Avenue South  
St. Cloud, MN 56301-4498

University of Mary  
7500 University Avenue  
Bismarck, ND 58504

An articulation agreement is a formal partnership between two (2) or more institutions of higher education. The agreement specifies that all or some credits from a particular technical diploma or degree will be accepted towards a specified four-year degree program/major of study is specified. The VA School of Radiologic Technology participates in an agreement that is formed between its hospital-based program and a four (4) year academic institution with the goal of creating a seamless transfer process for students. A student in the VA Program under this articulation agreement is currently enrolled in a four-year degree radiography program in one of the above Universities. In these circumstances, the VA School of Radiologic Technology is an independent two year academic and clinical program without compensation leading to certification as a radiologic technologist for students who are concurrently enrolled at an outside university/college leading to a baccalaureate degree.

Please see articulation agreement for which each of the above universities has signed. Agreements are 10 years in length. A copy specific to each school is available upon request.

The VA School of Radiologic Technology participates in an affiliation agreement with the following facilities.

Children's Minnesota Hospital – Minneapolis  
2525 Chicago Ave  
Minneapolis, MN 55404

Hennepin Healthcare (HCMC)  
730 S 8th St,  
Minneapolis, MN 55415

Maplewood VA Clinic  
3100 Kennard St.  
Suite 100  
Maplewood, MN 55109

Northwest Metro VA Clinic  
7545 Veterans Drive  
Ramsey, MN 55303

An affiliation means a written agreement between the governing authority of the program and another organization under the terms of which specified services, space or personnel are provided to one organization by the other, but without exchange of moneys.

### ***Attendance Policies***

A good attendance record is an important part of overall performance. A review of the attendance record will be included in evaluations of the student's performance. Attendance at all radiographic lectures and clinical assignments is required.

Program officials must be notified when there is an excused absence. Prior notification and approval of time off is required. Clinical attendance is maintained at each clinical site. Each student has 120 hours of leave per year, 11 Federal Holidays, and 2 weeks off at Christmas. If a student uses any time after their 120 hours, they may be placed on disciplinary actions. If more than 3 days is used beyond student allotted time the student may be in danger of dismissal. If a student will be late, they must contact program officials. The student will be excused for 8 hours until a leave slip is filled out with specified time of absence.

Missed absences beyond the allotted student time will be made up immediately after graduation. If a student is absent during the makeup period for any reason other than

illness, the student may be in danger of dismissal. During this period, a physician's note will be required for absences due to medical reasons.

The above policy does not apply to students on a leave of absence. Transcripts will be marked with an incomplete for course work that is not finished. Upon return to the program, a grade will be assigned to finished coursework and the incomplete will be removed. Clinical make up assignments will be determined by school officials to ensure competency has been achieved.

### ***Blood Donating***

To contribute to the well-being of our patients, students, employees, and volunteers are encouraged to consider donating blood. Donating blood is not a requirement of the program.

- Appointment must be scheduled one week in advance with the program officials and the blood bank (extension 31-2275)

### ***Classroom Courtesy***

Students will attend all scheduled classes and student activities unless excused by the program officials.

Classes begin promptly at the specified time.

Students are responsible for all lecture and test material. If a student misses a test, the student must contact the instructor within twenty-four hours, to make up the test. The student and instructor will decide on a mutual date to make-up the examination. Quizzes are not made up.

Civil and professional behavior is expected from the students. Disruption in class is unprofessional toward instructors and fellow classmates. It will not be tolerated. This includes interruptions that include cell phone use, instant messaging while class is in session, or disruption from any other electronic devices. An initial disruption will result in a verbal reprimand, a second disruption carries a minimum penalty of written reprimand to a maximum penalty of suspension. After a third disruption, students may incur suspension at a minimum or dismissal as a maximum penalty. Anytime the student misses time due to suspension, class time will be made up after graduation.

In cases where a student would like to record classroom activity, the request should be made directly to the instructor prior to the class recorded. The instructor will have the sole discretion in giving permission to allow recording. This recording agreement will stipulate that such recordings are for personal academic use only. The student may not share,

replicate, or publish the recording, in whole or in part, or use the recording for any other purpose, without the approval of the instructor.

### ***Clinical Progression***

To assure meaningful clinical participation, the student must master the following classroom and didactic aspects, which are necessary to perform in the clinical setting.

- a. The VA Program provides a competency-based curriculum allowing for effective student learning by providing a knowledge foundation prior to performance of procedures. To assure meaningful clinical participation, the student must master didactic and laboratory aspects, which are necessary to perform in the clinical setting. Didactic instruction with a passing grade on each unit must be completed before students attempt any clinical competency.
- b. The student continues clinical participation by next practicing the exam in a simulated environment to ensure appropriate positioning. This occurs during the laboratory procedures class under the supervision of the qualified radiologic technologist instructor to receive a passing grade on the simulation.
- c. This learning is continued by observing a practicing technologist in the execution of duties.
- d. This participation moves from a passive mode of observation to a more active mode of assisting and then practicing exams under the direct supervision of a technologist. The JRCERT defines direct supervision as student supervision by a qualified radiographer who reviews the procedure in relation to the student's achievement, evaluates the condition of the patient in relation to the student's knowledge, is physically present during the conduct of the procedure, and reviews and approves the procedure and/or image.
- e. Students need to practice a minimum of 3-5 times for common exams and record it in a personal notebook by placing a "P" beside the examination.
- f. When attempting to pass a competency the technologist must be informed of the attempt and the appropriate competency form must be completed. This form uses a Likert Scale of 1-5 in order to rate responses to the evaluative requirements measuring knowledge, perceptions, values, attitudes and appropriate radiographic skills. The program officials, or a radiologic technologist with 2 years minimum experience, will rate according to protocol requirements. 5

indicates excellence, 4 is above average, 3 is average, 2 is below average, and a 1 indicates unacceptable. 80% is the passing rate.

g. After passing the competency, the student is capable of performing radiographic procedures independently with indirect supervision. The JRCERT defines indirect supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement. "Immediately available" is interpreted as the physical presence of a qualified radiographer adjacent to the room or location where a radiographic exam is being performed. This availability applies to all areas where ionizing radiation equipment is in use on patients. Students must be directly supervised during surgical and all mobile, including mobile fluoroscopy, procedures regardless of the level of competency.

h. A student who repeats a radiograph will be under direct observation of a technologist. When the exam has finished, the observing technologist and student will record the reason for the repeat in the digital radiography equipment.

i. The clinical coordinator will document failed competencies. If there is a trend in the failed competencies, including 3 failed competencies for the same exam, the program official will counsel the student to determine how the exam may be successfully completed.

j. The clinical coordinator maintains an electronic master list of competencies, as well as a personal mastery list for each student. Students have continuing access on the SharePoint drive.

k. The purpose of clinical education in Diagnostic Imaging is to provide opportunities for the student to apply theoretical principles of radiography, patient care and procedures to practical experience. Students will have the status of learners and will not replace members of the affiliated clinical staff. All students will have direct supervision until competency is completed. After meeting the competency, the student may perform that examination under indirect supervision (see above for definition).

### ***Clinical Radiography***

The student is in the clinical area for approximately 2600 hours for the two years.

Student's clinical rotations are assigned to areas within the department from one to four weeks. If the student leaves an assigned clinical area, the student must notify the room technologist or clinical coordinator that they are going to another area. Students should

receive a fifteen-minute break for every four-hour segment of clinical time. If the program director or clinical coordinator is unable find the student, or the supervising technologist does not know where the student is, the student may face disciplinary action. Time missed due to disciplinary actions is completed after graduation.

At “low volume” time, students will use the time for discussing procedures and cases with the assigned room technologist. Practicing simulated procedures is encouraged.

It is the student’s responsibility, along with the assigned technologist, to maintain a clean working environment. This includes the radiographic examination rooms, central areas, and hallways.

Each student is responsible for keeping a clinical record book of the procedures they are involved in completing. Record books must be current. Program officials and radiologic technologists will review the record books for a minimum of 3-5 exams before attempting a common competency exam. This does not apply to rare or uncommon exams where observance and simulation may be counted as practice exams.

The Veterans Affairs Health Care System and our affiliate hospitals are non-smoking facilities.

The use of electronic devices, including but not limited to, cell phones, iPads, personal computers, smartwatches (outside of telling time), are strictly prohibited in class and in clinical. These items may be used during designated breaks. If an exception is needed, prior approval from Program Officials is required. An initial disruption will result in a verbal reprimand, a second disruption carries a minimum penalty of written reprimand to a maximum penalty of suspension. After a third disruption, students may incur suspension at a minimum or dismissal as a maximum penalty. Anytime the student misses time due to suspension, class time will be made up after graduation.

All students at their clinical facilities will use professional and ethical behavior.

Food must be kept to a minimum in all patient care areas, this includes but is not limited to technologist work areas. Full meals (hot or cold) should be limited to the breakroom or cafeteria.

### ***Clinical Record Book***

Each student must purchase a clinical record book/notebook each year. Each student should record examinations in which they are actively involved (this includes assisting in positioning and setting exposure factors). Each entry must include the examination, date, and initials of the supervising technologist. The program routinely reviews clinical record books before competency.

### ***Clinical Responsibilities of the Student***

Students not adhering to the following responsibilities are asked to leave the clinical area and will receive disciplinary action requiring make-up for that day.

The student must:

- a. Prepare for assignment for the clinical experience:
  1. Review radiographic procedures and protocol routinely.
  2. Review emergency procedures.
  3. Maintain a set of lead markers for marking radiographs.
- b. Arrive promptly for clinical experience.
- c. Notify program officials when late or unable to attend.
- d. Arrange with program officials to make up missed clinical time.
- e. Assume legal responsibility for providing safe and effective patient care.
- f. Communicate with technologist, co-workers, patients, and their families in a respectful, professional manner.
- g. Practice the Code of Ethics of the American Registry of Radiologic Technologist.
- h. Adhere to the program dress code for radiography students.
- i. Record clinical competencies as required for current rotation.
- j. Complete assignments in a timely fashion.

### ***Clinical Rotations***

Students are admitted in the fall, with a limited number of openings each year. The program is 24 consecutive months with the following schedule:

#### ***Clinical Rotation Hours:***

- Quarter 1-2
  - Monday, Wednesday, Friday: 07:30-11:00
  - Tuesday, Thursday: 07:30-15:30
- Quarter 3-4
  - Monday, Wednesday, Friday 07:30-11:30
  - Tuesday, Thursday 07:30-15:30
- Quarter 5-6
  - Monday, Wednesday, Friday 07:30-15:30
  - Tuesday, Thursday 07:30-11:30
- Quarter 7-8
  - Monday, Wednesday 07:30-15:30
  - Tuesday, Thursday, Friday 07:30-11:30

#### ***Class Hours***

- Quarter 1-2
  - Monday, Wednesday, Friday 11:30-15:30

- Quarter 3-4
  - Monday, Wednesday, Friday 12:00-15:30
- Quarter 5-6
  - Tuesday, Thursday 12:00-15:30
- Quarter 7-8
  - Tuesday, Thursday, Friday 12:00-15:30

***Offsite Rotation Hours\****

Hennepin County Medical Center Rotation:

- Monday, Wednesday, Friday: 14:30-23:00
- Tuesday, Thursday: 15:00-19:30

Minneapolis Children’s Hospital:

- Monday, Wednesday, Friday 07:30-15:30
- Tuesday, Thursday 07:30-11:00

\*Clinical hours may change due to the class schedule

***Clinical Sites***

Hennepin County Medical Center  
 701 Park Avenue  
 Minneapolis, MN 55415

Children’s Hospital and Clinics of Minnesota  
 2525 Chicago Avenue South  
 Minneapolis, MN 55404

Maplewood VA Clinic  
 1725 Legacy Pkwy E,  
 Maplewood, MN 55109

Northwest Metro VA Clinic  
 7545 Veterans Dr,  
 Ramsey, MN 55303

VA Health Care System  
 One Veterans Drive  
 Minneapolis, MN 55417



### ***Communicable Disease***

Communicable diseases vary in the virulence, duration, and mode of infection and effects. Copies of vaccinations are required for the program to protect students, patients, and clinical staff. The following is required:

1. Students with communicable diseases should not attend clinical courses. They must inform the clinical coordinator of the absence from clinical. See the absence policy regarding make-up time.
2. Student with any of the following conditions are to report to program officials prior to clinical assignments:
  - a. Dermatitis, skin rash, lesions, or boils
  - b. Chickenpox, shingles
  - c. Scabies
  - d. Hepatitis
  - e. Diarrhea
  - f. Eye infection
  - g. Productive/persistent cough
  - h. Tuberculosis
  - i. Lice
  - j. Measles, mumps, or rubella
  - k. HIV infection
  - l. Cold sores (herpes simplex infection)
  - m. Influenza
  - n. Strep throat (must be on medication for twenty-four hours before reporting to clinical)
  - o. COVID-19
3. Students with communicable diseases that are relatively long duration must present a written diagnosis to the program officials. Dependent upon the diagnosis, the student may be able to continue clinical with directions regarding patient contact or will drop the clinical rotation until the illness is resolved. Any missed clinical time is completed after graduation. All information is confidential and is not released unless mandated by law.

### ***Contingency Plan Policy***

For: Minneapolis VA Healthcare System, Radiography Program

Thru: Operations Manager, Mary Shaw

## **PURPOSE AND AUTHORITY**

The purpose of this memorandum is to establish policy for a contingency plan for the Minneapolis VA Healthcare System (MVAHCS) Radiography Program. The radiography program may utilize the following steps for emergency circumstances such as a mass casualty event, pandemic, or a natural disaster impacting MVAHCS and student access to clinical/didactic settings.

The radiography program's purpose is to prepare graduates with entry-level skills, knowledge, and attitudes of a staff technologist within a 24-month time frame. However, extenuating catastrophic circumstances may extend the program requirements beyond the expected graduation date.

This memo sets forth procedures and processes to ensure compliance with The Joint Review Committee on Education in Radiologic Technology (JRCERT) Standards for an Accredited Educational Program in Radiography. Effective January 1, 2021. Adopted April 2020.

## **PROCEDURES**

The program will ensure that all graduates meet graduation requirements, including ARRT required competencies and successful completion of all coursework with a "C" (80%) or better.

### **Clinical modifications with appropriate notification**

Assigned clinical site changes.

Assigned clinical schedule (date and time) changes.

Modifications to student participation expectations (i.e., limited involvement with isolation patients.)

Change in completion date of program (i.e., extension to acquire clinical course requirements or earlier graduation if all requirements are met).

### **Didactic modifications with appropriate notification**

Class meeting location changes.

Class meeting schedule (date and time) changes.

Temporary utilization of distance learning tools for class meetings typically delivered face-to-face i.e., Canvas Learning Management System (LMS), Big Blue Button via Canvas, Teams Virtual Meetings, Zoom.

Extension of course requirements beyond the expected completion date or earlier graduation if all graduation requirements are met.

### **Illness and/or Loss of Faculty**

Remaining faculty will assume the teaching workload until further accommodations can be made. Staff technologists, meeting JRCERT faculty requirements, may assist in teaching if the program anticipates long-term instructor absence. Accommodations by department administration should occur as quickly as possible.

Class courses on Canvas (LMS) allow easy access to substitute teaching materials on short notice. Access to Canvas is available from home and on mobile phones. Staff technologists will be given instructor access to classes they will be teaching.

### **ASSIGNMENT OF RESPONSIBILITIES**

What you can expect from Program Leadership:

Program Director, Clinical Coordinator

- a. Timely communication via SRT text messaging.
- b. Prioritization of student and faculty safety.
- c. Commitment to student professional development.
- d. Assurance that all program graduates meet graduation requirements.

### **DEFINITIONS**

Contingency Plan. A contingency plan is a course of action designed to help an organization respond effectively to a significant future incident, event or situation that may or may not happen.

### **REFERENCES**

Joint Review Committee on Education in Radiologic Technology (JRCERT) Standards for an Accredited Educational Program in Radiography. Effective January 1, 2021,

Adopted April 2020. Standard One: Accountability, Fair Practices, and Public Information, Contingency Plan.

## **SIGNATORY AUTHORITY**

Mary Shaw,  
Operations Manager  
Imaging Department  
Date Approved: 12/2022

### ***Course Descriptions***

*Clinical Rotations – (Credit Hours Vary, see [Curriculum Sequence](#))*

This is the student's experience in performing as an actual part of the health care team. The clinical training plan will focus on patient care, protocol in the health care facility and imaging department, and on identification of diagnostic equipment and supplies. Students will also practice interpreting general radiographic considerations. Emphasis will be radiographic positioning and manipulation of radiographic equipment and accessories related to radiography.

The student will continue to acquire and build skills while performing radiographic procedures. The student will continue to increase skill in portable radiography.

Students are required to demonstrate competency in regular radiographic areas and procedures, also pediatrics and trauma. Competency is achieved in studies requiring the use of contrast agents, especially those of the digestive and urinary systems. In addition, the student is introduced to specialized studies of the vascular system, computed tomography, digital imaging, magnetic resonance, mammography, and ultrasound. This course emphasizes the development of independence, discretion and judgment by the student while performing radiographic procedures. The student is expected to correlate all clinical and didactic experience while demonstrating proficiency and efficiency.

### **Cross-Sectional Anatomy (3.0 Credits)**

This class provides students with the tools for understanding anatomy in three dimensions. Students will be able to visualize the appearance and the relationships in planar sections following completion of this material. Students are introduced to common cross-sectional cranial, thoracic, abdominal, and pelvic structures.

(Prerequisite: Radiographic Procedures IV)

### Digital Imaging

This course is a class presently taught in Radiographic Exposure I & II, and Radiologic Physics I & II. It offers an overview of digital applications in medical imaging. Basic principles of digital radiographic imaging technology are discussed, including image acquisition fundamentals, processing, physical and technological aspects of digital modalities, and effective use of digital imaging technologies.

### Medical Law and Ethics (3.0 Credits)

The fundamentals of bioethics, ethical codes, confidentiality, patient rights and humanistic health care are taught in this course. Legal terminology, legal judgment, legal documents, and litigation are also discussed. Students explore the legal, ethical, and moral dilemmas currently faced by healthcare professionals, and identify issues related to potential legal liability in the workplace.

### Medical Terminology I (3.0 Credits)

In this course students learn to recognize and build medical terms after learning the meaning of word parts. The application of radiographic terms will be discussed. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. The course is based on a systems approach. Students will also learn how to interpret and use common medical abbreviations and symbols. Upon completion, students should be able to pronounce, spell, and define accepted medical terms.

### Medical Terminology II (3.0 Credits)

This is a continuation of Medical Terminology I. Students continue to learn to recognize and build medical terms after learning the meaning of word parts. The application of radiographic terms will be discussed. The course is based on a systems approach. Students will also learn how to interpret and use common medical abbreviations and symbols.

(Prerequisite: Medical Terminology I)

### Patient Care in Radiography (3.0 Credits)

The radiography technologist provides for the patient's physical and psychological needs. Along with communication skills, body mechanics, isolation and aseptic techniques, students learn the care of IV's and drainage tubes. There is also a focus on emergency protocols, as well as contrast reactions. Students complete CPR certification and achieve competency in venipuncture. Students master the ARRT General Patient Care Procedures and achieve a simulation competency in venipuncture prior to the expectation of demonstrating competency during their clinical experience.

### Radiation Biology and Radiation Protection (4.0 Credits)

This course is a study of the principles of cell radiation interaction. Students study factors affecting cell response to acute and chronic results of radiation. Principles of radiation protection and responsibility by the radiographer to patients, personnel and the public are presented. Regulatory policy is discussed. Basic principles of measurement, energy, atomic structure, electricity, magnetism, and their application to radiation production take place in this course. Students also study x-ray production and scatter radiation.

(Prerequisites: Radiologic Physics II)

### Radiographic Exposure and Technique I (3.0 Credits)

This course covers an introduction to the scientific principles that govern radiographic technical factors. Topics include receptor exposure, contrast, spatial resolution, and distortion. Photographic and geometric properties of radiographs are discussed. The course begins covering fluoroscopic imaging and the image intensifier. This course is designed to create a foundation of knowledge upon which an understanding of the principles that govern radiographic technique and quality can be built.

### Radiographic Exposure and Technique II (3.0 Credits)

Emphasis is on radiographic image quality through presentation of prime technical factors and their effect on radiographic quality. Students will be involved in solving technical problems and making technical adjustments related to prime exposure factors. Further discussion on fluoroscopic imaging occurs.

(Prerequisites: Radiographic Exposure I)

### Radiographic Procedures I (3.0 Credits)

This course will provide the student with the knowledge necessary to perform radiographic procedures relative to the thoracic and abdominal cavities, upper extremities including shoulder girdle, bony thorax, and mobile radiography. Emphasis will be on radiographic terms, positioning, manipulation of radiographic equipment and accessories and related patient care considerations. Surgical radiography will be introduced.

### Radiographic Procedures I Laboratory (2.0 Credits)

Instructors demonstrate projections, which will best demonstrate the anatomy learned during didactic learning. Students also will demonstrate projection they have learned.

### Radiographic Procedures II (3.0 Credits)

This course provides students with the knowledge necessary to perform radiographic procedures relative to the lower limb, vertebral column to include pelvis, surgical radiography, and trauma radiography. Emphasis will be on radiographic terms, positioning, manipulation of radiographic equipment and accessories, and related patient care considerations. Mobile radiography continues to be covered based upon learned projections. Students continue to develop the knowledge necessary to completely perform radiographic procedures relative to the bony thorax, upper extremities, shoulder girdle, and other procedures previously covered. (Prerequisites: Radiographic Procedures I, Radiographic Procedures I Lab)

### Radiographic Procedures II Laboratory (2.0 Credits)

Instructors demonstrate projections which will best demonstrate the anatomy learned during didactic learning. Students also will demonstrate projection they have learned. (Prerequisites: Radiographic Procedures I, Radiographic Procedures I Lab)

### Radiographic Procedures III (3.0 Credits)

This course provides the student knowledge necessary to perform radiographic procedures relative to the gallbladder and biliary ducts, upper and lower gastrointestinal track, urinary system. Venipuncture will be reviewed. Emphasis will be on anatomy, radiographic terms, positioning, and patient considerations related to radiography. Students continue to develop the knowledge necessary to completely perform radiographic procedures relative to the bony thorax, spine, extremities, trauma exams, and other procedures previously covered. (Prerequisites: Radiographic Procedures II, Radiographic Procedures II Lab)

### Radiographic Procedures III Laboratory (2.0 Credits)

Instructors demonstrate projections, which will best demonstrate the anatomy learned during didactic learning. Students also will demonstrate projection they have learned. (Prerequisites: Radiographic Procedures II, Radiographic Procedures II Lab)

### Radiographic Procedures IV (3.0 Credits)

This course emphasizes the basic radiographic procedures and positioning related to paranasal sinuses, temporal bones, facial and cranial bones. Students continue to develop the knowledge necessary to completely perform radiographic procedures relative to the bony thoracic, abdomen, spine, extremities, trauma exams and other procedures previously covered. (Prerequisites: Radiographic Procedures III, Radiographic Procedures III Lab)

#### Radiographic Procedures IV Laboratory (2.0 Credits)

Instructors demonstrate projections, which will best demonstrate the anatomy learned during didactic learning. Students will practice and demonstrate projections they have learned.

(Prerequisites: Radiographic Procedures III, Radiographic Procedures III Lab)

#### Radiographic Procedures V (4.0 Credits)

This course provides the student with an overview study of advanced and special imaging procedures. This course includes an introduction to the various modalities in the Imaging Department including but not limited to Mammography, Interventional Radiography, Cardiac, Oncology, Ultrasound, Forensic Radiography, and Bone Density. The following areas are also reviewed: Mobile, C-Arm, Surgical, and Trauma. Methods of learning include class lecture, self-study, presentation, guest lecturers and discussion.

(Prerequisites: Radiographic Procedures IV, Radiographic Procedures IV Lab)

#### Radiologic Pathology I (4.0 Credits)

This course will provide the student with the concepts of disease and its effects on the human body. Pathology and diseases as they relate to various radiographic procedures and radiographs will be discussed.

(Prerequisites: Clinical, Radiographic Procedures IV)

#### Radiologic Pathology II (4.0 Credits)

This class is a continuation of the Radiographic Pathology I, where the students continue to learn about the effect of diseases on the human body.

(Prerequisites: Radiologic Pathology I)

#### Radiologic Physics I (4.0 Credits)

This course covers the fundamentals of physics. Material covered includes specific concepts of radiation science through electromagnetism that occurs inside and outside the x-ray tube.

#### Radiologic Physics II (4.0 Credits)

This course will provide the student with knowledge of the equipment used routinely to produce diagnostic images. Imaging modalities, including fluoroscopy, automatic exposure devices and conventional tomography and various recording media techniques will be discussed.

(Prerequisites: Radiologic Physics I)



### Registry Review I (3.0 Credits)

This course is a review of all information given during the students' time spent in the classroom. The review can consist of mock registry exams, worksheets for review, self-study, and student instruction with guidance of the instructors.

(Prerequisites: Radiologic Pathology II, Radiation Biology and Radiation Protection)

### Registry Review II (4.0 Credits)

This course is a review of all information given during the students' time spent in the classroom. The review can consist of mock registry exams, worksheets for review, self-study, and student instruction with guidance of the instructors.

(Prerequisites: Registry Review II)

### Topics in Radiology (4.0 Credits)

This course provides the student with the opportunity to investigate and participate in a radiologic technology facet of their choosing. Emphasis will be placed on areas of specialization and career options and mobility.

(Prerequisites: Radiologic Pathology II, Radiation Biology and Radiation Protection)

### Total Quality Management (TQM) (4.0 Credits)

This course provides the students with a systematic process for solving problems within a radiography department. Emphasis is placed on the students solving a dilemma in the radiology department or working on a project to improve the Imaging Department or the School of Radiography. Project management principles are used to resolve the problem.

(Prerequisites: Radiologic Pathology II, Radiation Biology and Radiation Protection)

\*Program Officials reserve the right to revise curriculum as indicated.

### **Curriculum Sequence**

Quarter 1	Title	Clock Hours	Quarter Credits
	Patient Care in Radiography <sup>‡</sup>	30	3.0
	Medical Terminology I <sup>‡</sup>	30	3.0

Quarter 1	Title	Clock Hours	Quarter Credits
	Radiographic Procedures I <sup>‡</sup>	30	3.0
	Radiographic Exposure and Technique I	30	3.0
	Radiographic Procedures I Lab	40	2.0
	Clinical Practicum I	288	3.5
	Total:	448	17.5

<sup>‡</sup> Courses offered in a blended format, a combination of online and on campus.

Quarter 2	Title	Clock Hours	Quarter Credits
	Radiographic Procedures II <sup>‡</sup>	30	3.0
	Radiographic Procedures II Lab	40	2.0
	Medical Terminology II <sup>‡</sup>	30	3.0
	Radiographic Exposure and Technique II	30	3.0
	Clinical Practicum II	288	3.5
	Total:	418	14.5

<sup>‡</sup> Courses offered in a blended format, a combination of online and on campus

Quarter 3	Title	Clock Hours	Quarter Credits
	Radiographic Procedures III <sup>‡</sup>	30	3.0
	Radiographic Procedures III Lab	40	2.0
	Radiologic Physics I	40	4.0
	Clinical Practicum III	288	3.5
	Total:	398	12.5

<sup>‡</sup> Courses offered in a blended format, a combination of online and on campus

Quarter 4	Title	Clock Hours	Quarter Credits
	Radiographic Procedures IV	30	3.0
	Radiographic Procedures IV Lab	40	2.0
	Radiologic Physics II	40	4.0
	Medical Law and Ethics	30	3.0
	Clinical Practicum IV	288	3.5
	Total:	428	15.5

<sup>‡</sup> Courses offered in a blended format, a combination of online and on campus

Quarter 5	Title	Clock Hours	Quarter Credits
	Radiographic Procedures V	40	4.0
	Radiologic Pathology I	40	4.0
	Clinical Practicum V	384	4.5
	Total:	464	12.5

‡ Courses offered in a blended format, a combination of online and on campus

Quarter 6	Title	Clock Hours	Quarter Credits
	Radiologic Pathology II ‡	40	4.0
	Radiation Biology and Radiation Protection	40	4.0
	Clinical Practicum VI	320	4.0
	Total:	400	12.0

‡ Courses offered in a blended format, a combination of online and on campus

Quarter 7	Title	Clock Hours	Quarter Credits
	Cross-Sectional Anatomy	30	3.0
	Registry Review I‡	30	3.0

	Topics in Radiology <sup>‡</sup>	40	4.0
	Clinical Practicum VII	336	4.0
	Total:	436	14.0

<sup>‡</sup> Courses offered in a blended format, a combination of online and on campus

Quarter 8	Title	Clock Hours	Quarter Credits
	Registry Review II <sup>‡</sup>	40	4.0
	Total Quality Management (TQM) <sup>‡</sup>	40	4.0
	Clinical Practicum VIII	280	3.5
	Total:	360	11.5

<sup>‡</sup> Courses offered in a blended format, a combination of online and on campus

Credit Hours Calculator:  
Classroom = 1 credit/10 hours  
Lab = 1 credit/20 hours  
Clinic = 1 credit/80 hours

The VAHCS School of Radiologic Technology uses the professional curriculum developed by the American Society of Radiologic Technology (ASRT). Every two years, program officials revise and update the curriculum.

Program Officials reserve the right to revise curriculum as indicated.

## ***Disability Policy***

### Accommodations under the Americans with Disability Act (ADA)

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 define reasonable accommodation as an academic adjustment, modification to the environment, auxiliary aid, or service that ensures students with a disability who are otherwise qualified have an equal opportunity to participate. Please note that an accommodation is not reasonable when it poses a direct threat to the health or safety of others, lowers academic standards, alters the nature of the program, results in substantial change in an essential element of the curriculum, and/or fundamentally alters an academic requirement essential to meeting licensing or registry requirements. All students are expected, with or without reasonable accommodation, to meet competencies and performance standards that are required to safely perform the normal roles of a Radiologic Technologist.

The VA School of Radiologic Technology, in compliance with ADA, does not provide attendants individually prescribed devices, readers for personal use or study, or other devices of a personal nature. The program, also in compliance with ADA, provides tutoring to students with disabilities in the same manner as it provides tutoring to non-disabled students.

### Disability

The ADA Amendments Act of 2008 defines disability as “a physical or mental impairment that substantially limits one or more major life activities. A major life activity includes but is not limited to caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, working, sitting, reaching, interacting with others, and a major bodily function”. Please note that a diagnosis or impairment by itself is not a disability and is insufficient to qualify an individual as disabled. Therefore, students must disclose their disability and the program, in compliance with ADA, may request documentation to establish the disability and the need for accommodation.

### Acceptable Documentation from a Health/Education Professional

Students are responsible for providing any documentation that the program requests to establish a disability and the need as well as the type of accommodation. Acceptable documentation from a health or education professional must be typed on professional letterhead, provides the name and credentials of the professional, is dated and is signed by the professional. The person providing the documentation is a health or education professional who is qualified to provide the following: a) a clear, specific statement of the diagnosis/impairment and the degree of functional limitation to one or more major

life activities; b) description of any behavioral, cognitive, medical, or other features accompanying the disability that may relate to the requested accommodation; c) medical side effects that may warrant requested accommodations; d) recommendations for accommodation; and e) rationale for recommended accommodations.

Documentation needs to be recent within three years of the disclosure to the program because the

effects of a diagnosis can change over time, resulting in changes in accommodation or the individual is no longer eligible for accommodation under ADA.

### ***Equal Employment Opportunities***

The radiography program at the Veterans Affairs Health Care System is an equal opportunity program. The student selection is non-discriminating with respect to race, color, creed, sex, sexual orientation, age handicap or national origin.

### ***Financial Assistance***

The VA School of Radiologic Technology has no scholarship/grant/loan programs. The school does not participate in federal financial aid funding.

Students may participate in part time employment at the VA Health Care System

### ***Floor Duty Rules/Procedures***

1. The student will check in for morning huddle each day before reporting to their clinical site.
2. It is the responsibility of the student to be aware of work in their assigned area and to assist as needed. If an examination is in your assigned room and you are not working with your technologist, you are assisting other technologist or students. If your technologist is not involved and your room is not in use, but others in the area are doing examinations, you should be assisting throughout your area as needed. If it is extremely quiet, you can practice positioning on your fellow classmates or technologists.
3. Practicing of radiography positioning is highly encouraged during down time.
4. Students are performing or assisting the technologist when patients are present in rooms.
5. When assigned in fluoroscopy, portables, GU or surgery areas, students can help with patients in general radiography after the schedule is finished.

### ***General Appearance***

1. Hands are clean and washed after each patient. Nails short, well-groomed, and only a neutral polish is used.
2. Breath should be free of offensive odors.
3. All uniforms are clean and pressed. Shoes worn must be clean and in good repair.
4. Hospital identification badges will always be worn while in the hospital/clinic areas.
5. Student radiation protection badges will always be worn in the clinical areas during program hours.
6. Students reporting to classes or clinical sites with excessive perfume or cologne will be required to take a personal leave day.
7. Physicians are referred to with their proper title.
8. Adherence to all hospital policies is required.
9. Professional conduct, courtesy, and cooperation will always be exercised to the imaging staff, fellow students, patients, hospital employees, and the public.
10. Students will report promptly to classes and clinical areas according to the schedule.
11. A lab coat that is the same color as your uniform is allowed.
12. Students are required to be pleasant, courteous, modest, and empathetic always with patients, co-workers, and other health professionals.

Any infractions of the above regulations may result in disciplinary action.

### ***Grading Procedures***

Clinical attendance is important. Missing more than 3 absences beyond the student allotted time will affect the overall clinical grade.

Grades are determined by the following:

#### **Rotations Objective Evaluation**

Rotation objectives are designed to inform the student and technologist of the purpose of each rotation, as well as to provide an evaluation. All clinical objectives are available for students to reference on the student drive. The student at the onset of the rotation should review the objectives. Student evaluation forms are completed at the end of each rotation by a clinical preceptor, program liaison, or Lead Technologist/Supervisor.



## Clinical Competency Evaluations

Clinical competency evaluations determine if the student can perform radiographic procedures on patients. The student requests competency evaluation after the student has practiced the exam approximately 3-5 times. Clinical personnel, clinical instructors or school officials may complete these competency evaluations. The student must successfully perform the procedure at a mastery level of 80-100% to achieve a competency. Once competency on an exam is successfully completed, the student may perform that radiographic procedure under indirect supervision. The clinical coordinator maintains a master list of these competencies. To ensure retention of procedural competency, random follow-up competencies may be requested.

If the student fails to complete the competency, the student will turn in failed competency form to program officials. The clinical coordinator will track failed competencies. Program officials will be able to assist students in better preparing themselves to be competent technologists.

## Clinical Performance Evaluation

Clinical personnel at affiliate hospitals complete the clinical performance appraisals at the end of each rotation. It is an evaluation of technical skills, radiation protection, organizational skills, patient rapport, working relationships, initiative, appearance, and professionalism. Clinical personnel give the evaluations to program officials. These evaluations are discussed with students at the quarterly conference.

## Image Critique

Image critique is a continuous exercise for reviewing and discussing current radiographic cases.

## ***Grading Criteria***

The program consists of lectures, demonstrations, discussions, lab exercises and clinical rotations.

Classes begin promptly at the specified time.

If you are working on a procedure, notify the faculty before the procedure begins and inform them that you will be late for class.

Students are responsible for all lecture and test material. Make up examinations are made up at a time and place determined by the instructor. If the student doesn't complete the make-up examination, they will receive a 0 for that examination.

All students are required to maintain a specific level of didactic and clinical education quality throughout their training. Therefore, the following criteria are being adapted:

- a. Students at the Minneapolis VA Health Care System, School of Radiologic Technology, will maintain an eighty percent in didactic and clinical areas.
- b. The final quarter grade consists of the following:
  1. Didactic Grade – 50%
    - a. Methods of evaluating didactic work may include the following:
      - i. Written Testing
        1. True and False
        2. Multiple Choice
        3. Matching
        4. Fill in the Blank
        5. Problem Solving
        6. Identification
        7. Essay
      - ii. Positioning Demonstration
  2. Rotation Grade – 25%
  3. Clinical Coordinator Evaluation – 25%
- c. The following is the breakdown of percentages to letter grades:

Letter Grade	Percentage Range
<b>A</b>	100% - 95%
<b>B</b>	94% - 88%
<b>C</b>	87% - 80%
<b>D</b>	79% - 75%
<b>F</b>	74% and below

### ***Grading (Didactic)***

The following actions are for students who do not maintain an eighty percent passing rate in the didactic portion of the school:

1. Students not maintaining an 80% passing rate at the mid-point of the quarter (6 weeks) in any class or classes will confer with program officials. A written plan is given to the student outlining requirements for the student to reach 80% in the final 6 weeks of that quarter.
2. At the end of the quarter, program officials will have a quarterly review to evaluate the student's progress. If the didactic grade for the class is not at an 80% passing rate the student is placed on academic probation for six weeks and given a written warning. An academic plan is given to the student to bring their grade up to passing rate.
3. The academic probation letter will be signed by the student. A plan will be given to the student to assist them in achieving the required 80% passing rate.
  - a. The class or classes are to be made-up the next quarter. (Example: Classes failed the first quarter will have a make-up plan for the second quarter.)
  - b. The class that needs to be made-up will be completed on a self-study basis with assistance from the primary instructor as needed.
  - c. Radiography personnel may assist in mentoring the student.
  - d. At the end of the make-up work, the instructor will meet with the student to document the student's progress.
  - e. The student is required to maintain an eighty percent passing rate in current classes and the make-up class for that following quarter. If an 80% passing rate is not maintained with assistance from instructor and/or mentor, the student will be dismissed.
  - f. Any subsequent failed classes will follow the same steps.
4. The student who does not meet didactic requirements in any three classes during the program, will be dismissed.

### ***Grading (Clinical)***

The following actions are for students who do not maintain an 80% passing rate in each clinical rotation.

1. Clinical rotations are one, two and four weeks in length. At the end of the rotation, the technologists will complete the clinical performance evaluation.
2. Students who do not maintain an 80% for a clinical rotation will fail the rotation. All failed rotations must be made up. Program officials will meet with the student to review the technologist's evaluation.

3. Students who do not maintain an 80% on a second clinical rotation will meet with program officials to review the technologist evaluation. The clinical coordinator 's evaluation may also be considered at this time. If the grade formula does not meet an 80% passing rate, the student is placed on academic probation. If there is a third time in not maintaining an 80% passing rate for a rotation, the student is dismissed from the program.

### **Clinical Competency Requirement**

Fifty-one competency examinations are needed to complete the program.

For quarters one and two, September - February of the first year, the student should strive to complete a minimum of twelve competencies.

For quarters three and four, March - August of the first year, the student should strive to complete a minimum of twenty-five competencies.

For quarters five and six, September - February of the second year, the student should strive to complete a minimum of forty competencies.

For the final quarters seven and eight, March - August of the second year, the student is required to complete the obligatory fifty-one competencies and ten mandatory general patient care activities, including all mandatory competencies and electives as described by ARRT.

Students may complete as many competencies each quarter as they have the training and education to perform. All policies governing clinical competencies must be adhered.

The following procedure is for the student who does not meet the above requirements:

The student has 10 school days to complete the benchmark competencies. Remedial action may be taken for students that have not achieved benchmark competencies.

### **Graduation Requirement**

A Certificate of Completion in radiography is awarded to students who:

1. Fulfills all radiography course requirements.
2. Earns a grade of eighty percent or higher in all required radiography courses.
3. Satisfactorily completes all clinical competency evaluation requirements.

4. Satisfactorily completes the written comprehensive final examination.
5. Satisfactorily completes the clinical patient care competencies required by the American Registry of Radiologic Technologist (A.R.R.T.) Following are the competencies:
  - a. CPR
  - b. Vital signs (blood pressure, pulse, respiration, temperature, pulse oximetry)
  - c. Sterile and aseptic technique
  - d. Venipuncture
  - e. Transfer of patient
  - f. Care of patient medical equipment (e.g., oxygen tank, IV tubing)

Students must complete all requirements for graduation to obtain eligibility to take the ARRT radiography examination.

### ***Grievance/Appeal Policy***

The MVAHCS, VA School of Radiologic Technology, recognizes the need to resolve complaints in a fair, impartial, and timely manner and thus establishes a grievance procedure to review and/or resolve causes of dissatisfaction in an orderly and systematic manner.

This procedure is used in situations of major concern and is intended to protect the student while allowing for a formal method of appeal. There is also an EEO specialist available to the student.

**Step One:** If you have a grievance, submit a complete written summary of the complaint to the Program Officials (Program Director and Clinical Coordinator). The complaint is presented to program officials within five working days of the occurrence. You will receive a written response within 10 working days of presentation of the appeal/grievance. If you are satisfied and accept the Program Officials decision, the appeal/grievance is over. If you are not satisfied with the results, proceed to Step Two.

**Step Two:** A complete written summary of the complaint and program officials' response is presented to the Advisory Board. The advisory board will meet within 10 working days of receiving the written complaint and response. The student will receive a written response within 5 working days of the presentation of the appeal/grievance. If you are satisfied and accept the Advisory Boards decision, the appeal/grievance is over. If the student is not satisfied with the results, proceed to step 3 within 5 working days

Advisory Committee members may include, but are not limited to:

- Program Director
- Medical Advisor/Faculty

Clinical Coordinator  
Junior Student Representative  
Senior Student Representative  
Operations Manager  
Imaging Supervisor

Step Three: A committee, made up of non-imaging personnel, is contacted to decide the final decision. The Program Director has 10 working days to convene this committee. At that time, the written complaint and responses from the program officials and Advisory Board will be given to the non-imaging committee. This committee will have 5 working days to read and recommend a solution. Their recommendation is final.

The members of the Minneapolis VA Health Care System Allied Health Professional Excellence Committee (AHPEC) would include but not be limited to:

AHPEC Members –  
Associate Chief of Staff for Education  
Social Work Executive  
Education Services Program Specialist

### ***Health***

After appointment to the radiography program and prior to the first day of class, student must have a physical examination. The physical/immunization record form must be completed. This examination is scheduled at the MVAHCS and is free to the student. A rubella titer and immunization record must be provided. Every student must have a PPD (purified protein derivative) test. Hepatitis B vaccine is available to the students per hospital policy.

Students will be working with pediatric patients at our clinical affiliates; therefore, the following immunizations or documented histories of these diseases are required:

- a. Chicken Pox
- b. Measles (Rubella)
- c. Mumps
- d. Rubella

There is no charge for the required immunizations.

### ***Health (student)***

If a student becomes ill or injured while participating in clinical radiography courses, treatment will be at the discretion of the student. An occurrence form must be complete

and forwarded to program officials. Billing for treatment and/or services rendered shall be directly the student's responsibility.

### ***Health Care Policy***

1. The Minneapolis VA Health Care System School of Radiologic Technology does not offer health insurance for the student.
2. Some immunizations (Hepatitis) are given free of charge.
3. If a student is injured at the MVAHCS or an affiliate, they may receive treatment at the MVAHCS, located at 1 Veterans Drive, Minneapolis, MN 55417
4. Physical examinations for school admission are completed at the MVAHCS expense.

### ***Immunization***

All students born after January 1, 1957, must have documented proof of measles immunization and booster. In addition, all students must have chicken pox vaccine or documentation of the disease. This record will remain in the student's file indefinitely. This document is duplicated as needed by the program director for the various clinical sites. If needed, students will receive immunizations free of charge from the MVAHCS; also, hepatitis B vaccine is available for students. The three immunizations are given free of charge to students. PPD skin tests are given yearly.

The student has three months from the first day of school to show proof of immunization.

### ***Inclement Weather***

In the event of inclement weather, students are expected to attend all clinical and classroom schedules unless notified of cancellation by program officials. Students will have an additional hour to get to school on days of extreme inclement weather. Students need to contact program officials as soon as they arrive.

### ***Learning Resources***

1. The accessibility of the VA library 24/7.
2. The accessibility of computers in the VA library 24/7.
3. Tutoring and mentoring services available provided by program officials.
4. A physics tutoring class is provided in the student's senior year to refresh their physics knowledge before taking the national boards.
5. A general radiography review class is provided in the student's senior year to refresh their general radiologic knowledge before taking the national boards.

6. Student Organization Meetings are available for the student to attend on a yearly basis.
7. A student bowl is available for the students to attend on an annual basis.
8. A student review seminar is available for the students to attend on an annual basis.

### ***Leave of Absence***

Leave of absence may be granted to students at the discretion of Program Officials in accordance with Minneapolis Veterans Affairs Health Care System (MVAHCS) policy.

Generally, each student may be granted up to twelve weeks leave per year for bona fide events including: short-term disability or sick leave, and family leave. Program Officials will determine what constitutes a bona fide leave and the length of leave on a case-by-case basis. All requests for leaves of absence will be made in writing to Program Officials at least thirty days in advance, or as soon as reasonably practicable. Personal leave time and sick time must be taken as part of the leave of absence and counted against the twelve weeks leave.

Upon return, students will make up any didactic or clinical time missed in that twelve-week period. Make-up work must be completed within the following 90 days. Any work not completed may be cause for dismissal.

The student in conjunction with program officials will develop an independent study course of action to make up all didactic materials missed. Program officials, department officials or technologists may assist the student in making up the clinical portion.

For a leave of absence that extends beyond 12 weeks the student may join the next graduating class. The student may resume at the point of suspended education or start from Quarter 1 (Year 1) or Quarter 5 (Year 2), whichever is most appropriate.

### ***Leave (Military)***

Military leave is granted in full accordance with State and Federal Regulations. The Program Officials must be notified promptly in writing when a student requires military leave. The following schedule will be followed for students who are called for active duty:

1. Six months or less, the student starts over upon return.
2. Six to 24 months, the student will start with the current class where they discontinued their studies.



### ***Library***

Located on the fourth floor of the MVAHCS is the Medical Library. This library contains medical books and journals on all facets of medicine. It has a study area and a large audiovisual section.

### ***Lockers***

All students are assigned a locker for personal belongings. Due to a shortage of lockers, some students may have to share lockers. At no time will personal belongings be in radiographic rooms, classroom, or in the department. Students are required to provide a lock for the locker.

### ***Mammography***

The radiography program sponsored by VA School of Radiologic Technology has revised its policy, effective 4/8/16, regarding the placement of students in clinical mammography rotations to observe and/or perform breast imaging. (Additionally, the policy may be applied to any imaging procedures performed by professionals who are of the opposite gender of the patient.)

Under the revised policy, all students, male and female, will be offered the opportunity to participate in clinical mammography rotations. The program will make every effort to place a male student in a clinical mammography rotation if requested; however, the program is not able to override clinical setting policies that restrict clinical experiences in mammography to female students. Male students are advised that placement in a mammography rotation is not guaranteed and is subject to the availability of a clinical setting that allows males to participate in mammographic imaging procedures. The program will not deny female students the opportunity to participate in mammography rotations if clinical settings are not available to provide the same opportunity to male students.

The change in the program's policy regarding student clinical rotations in mammography is based on the sound rationale presented in a position statement on student clinical mammography rotations adopted by the Board of Directors of the Joint Review Committee on Education in Radiologic Technology (JRCERT) at its April 2016 meeting. The JRCERT position statement is available on the JRCERT Web site, [www.jrcert.org](http://www.jrcert.org), Programs & Faculty, Program Resources.

### ***MRI Screening for Students***

**PURPOSE:** The purpose of this policy is to ensure the safety of the Radiologic Technology students before entering a Magnetic Resonance Imaging scanning room/field. It assures appropriate MRI Safety screening has been completed annually on each student.

**POLICY:**

All students in the Radiologic Technology program will be instructed in on-line and in-class MRI Safety basics prior to entering clinical MRI rotations. Additionally, each student will fill out an MRI Screening Form Questionnaire to ensure MRI safety compliance. Students may also be subject to additional screenings at MRI facilities.

Magnetic Resonance Imaging (MRI) scanners generate a very strong magnetic field within and surrounding the MR scanner. As this field is always on, unsecured magnetically susceptible (ferromagnetic) materials, even at a distance, can accelerate into the bore of the magnet with a force significant enough to cause severe injury or damage to the equipment, patient, and/or any personnel in its path.

Anyone entering the MR environment without being thoroughly screened by qualified MR personnel may potentially compromise their safety and/or the safety of everyone in the MR environment. It is the MRI technologist's responsibility to control all access to the scan room. As a student, you too become part of this safety team adhering to all MRI safety policies and procedures. At any point a student is in question about MRI safety, an MRI Technologist or Radiologist should be consulted.

Students will be responsible for reporting any changes which impact this screening and may thus compromise safety.

### ***Personal Leave Time***

Student personal leave is discussed in the Attendance section of this handbook. Additionally, students calling in sick must do so within thirty minutes of their morning rotation and must speak or leave messages to both program officials. It is the responsibility of the student to keep track of used time in conjunction with the clinical coordinator.

It is the responsibility of the student to inform outside rotations e.g., Hennepin Health Care System (HCMC), Children's Hospital and Clinics, Maplewood VA Clinic, and Northwest Metro VA Clinic if they are sick or in need of leave. The program officials must be informed, also.

Students may be dismissed for missing 3 absences beyond the students allotted time.

### ***Philosophy of Training***

The mission of MVAHCS's School of Radiologic Technology is to produce competent medical radiographers that are eligible for immediate employment, advanced training, and competent to pass the national registry. It is accomplished by the following:

- a. Recruiting students who demonstrate maturity, motivation, academic ability, and the professional attitude to succeed in the academic and clinical structure of a twenty-four-month radiography program.
- b. Providing all students with a quality education experience, this exceeds the minimum program accreditation requirements.
- c. Providing all students with didactic education based on sound learning principles and allowing them to master radiographic theory using instructional devices available.
- d. Providing all students with a simulation lab experience designed to bridge the didactic and clinical education.
- e. Providing a clinical environment that includes, learning opportunities using the latest state of the art radiographic equipment.
- f. Perfection of radiographic technique, positioning, and patient care correlate directly with didactic training.
- g. Providing all students, upon successful completion of the program, credentials and qualifications needed to allow for vertical and lateral career mobility and immediate employment.
- h. Providing all students with insight into professional growth and development among local, state, and national professional organizations in radiographic imaging
- i. Providing all students with the knowledge necessary to prepare them for the national registry examination given through the American Registry of Radiologic Technology
- j. Prepare all students in the profession to the conversation of life, health, and privation of disease.
- k. Encouraging students to pursue lifelong learning opportunities.

## **VOLUNTARY DECLARATION OF PREGNANCY FORM**

Minneapolis VA Healthcare System – Radiography Program

In accordance with the NRC’s regulation at 10CFR 20.1208, “Dose to an Embryo/Fetus,” I am declaring that I am pregnant. I believe that I became pregnant in the month of

\_\_\_\_\_, 20\_\_\_\_\_ (only the month and year need to be provided).

My due date is \_\_\_\_\_.

I understand that the radiation dose to my embryo/fetus during my entire pregnancy will not be allowed to exceed 0.5 rem (5mSv). I also understand that I am responsible for practicing safe radiation practices at all times. By signing this form, I am also confirming that I have read the program's pregnancy policy and agree to abide by the established policy.

I choose to:

( ) Continue in the program without modification

( ) Continue in the program with modification (please circle one of the options below.)

1. Clinical rotations may be adjusted. Upon return to the program, the student will complete all time in areas that were missed due to pregnancy.
2. Maintain the academic portion of the program and take a leave of absence from the clinical portion of the program. Upon return to the program, the student will complete all time in areas that were missed due to pregnancy.
3. Take a leave of absence from the program.

Print your name: \_\_\_\_\_ Date: \_\_\_\_\_

Student Signature \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Program Official)

## **WITHDRAWAL OF DECLARATION OF PREGNANCY FORM**

Minneapolis VA Healthcare System – Radiography Program

In accordance with my right to do so, I do hereby withdraw my declaration of pregnancy. I realize that the radiation dose limits will then be applied only to the time between the declaration date.

and the date of withdrawal of declaration.

Print your name: \_\_\_\_\_ Date: \_\_\_\_\_

Student Signature \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Program Official)

### ***Probation***

Probation is a first alternative rather than dismissing the student from the program if they fail to meet minimum requirements of academic and or clinical performance. Additionally, probation may result if a student fails to comply with hospital, department, and school policies. The length of the probationary period may vary depending on the circumstance but could be from a minimum of 2 weeks to one quarter (12 weeks). At the end of the probation period, if the student is not meeting minimum requirements for which they were placed on probation, the student may be dismissed from the program. If the student violates the terms of probation, they may be dismissed from the program. The Program may follow the VA Title 38 Table of Penalties for guidance with a second offense being grounds for putting a student on probation. Please see: <https://vaww.va.gov/OHRM/EmployeeRelations/conduct/TableOfPenalties.asp>

### ***Professional Associations***

Each student is required to become a student member of the MSRT. Other professional memberships are optional:

1. Minnesota Society of Radiologic Technology MSRT (MARS student organization)
2. American Society of Radiologic Technology (ASRT)  
15000 Central Avenue SE  
Albuquerque, NM 87123-3090 9 9(Elective)
3. American Registry of Radiologic Technology (ARRT)  
1255 Northland  
St. Paul, MN 55120-1155 (Ethics and Examination)
4. Joint Review Committee on Education in Radiologic Technology (JRCERT)  
20 N. Wacker Drive  
Suite 2850Chicago, IL 60606-3183 (Accreditation Organization)

Students may attend the MSRT annual meeting. Professional conduct is required. All expenses are the responsibility of the student. Students must attend all classes, presentations, and business sessions.

### ***Professional Conduct***

For any organization to function properly, particularly a hospital caring for sick and injured patients, all employees and students must cooperatively work together. The importance of this matter necessitates that the school takes equitable and consistent corrective actions for any acts of misconduct. Serious or repeat of minor violations would be grounds of dismissal. The following are examples of misconduct:

- Dishonest or falsifying any records including timecards.
- Leaving a work area during school time without the permission of the technologist in charge.
- Neglect of duty or refusing to follow the instructions of supervisors.
- Possession or being under the influence or use of illegal drugs or intoxicants on hospital property. Suspected use of abuse of drugs/alcohol may be subject to testing. See Substance Abuse Guide.
- Fighting, disorderly conduct, acts of violence or the possession of weapons on hospital property.
- Threatening or coercing any person while at the hospital.
- Discourtesy displayed toward patients, visitors, physicians, or fellow workers/students. This includes using vile or abusive language.
- Abuse of time spent on breaks, lunch or in the department.
- Disregard for safety rules, creating or contributing to unsafe or unsanitary conditions.
- Posting, removing, or defacing bulletins or notices on hospital property without authorization from the hospital.
- Unauthorized use, possession, copying or reading of hospital records, or disclosing any information from those records without authorization from the hospital.
- Theft, unauthorized removal, destruction or misuse of hospital property or property belonging to any person at the hospital. These include scrubs.
- Soliciting for or against any cause or organization during school time or during working time of the person being solicited or distributing literature of any outside cause or organization in work areas at any time.
- Soliciting tips or gifts from patients or visitors.
- Violation of dress standards.
- Loitering in the hallways.
- Use of the department telephone for personal calls.
- Leaving personal belongings in the department.
- Eating, drinking, chewing gum, smoking, etc., at unauthorized times or locations.
- Violation of any rules or standards now established or subsequently established by the school or by the hospital for students of the school or employees of the hospital.
- A student with more than 3 days absences beyond their allotted time off, will receive a written reprimand.

The forgoing examples are not intended to be an all-inclusive list of what is considered misconduct. The school reserves the right to review any conduct and to determine what disciplinary action, if any, should be taken; or what it determines in its sole discretion to be misconduct.

### ***Program Dismissal***

Program requirements for both academic and clinical performance are established.

Each student is expected to follow the MVAHCS hospital, departmental and school policies. Failure to do so is grounds for disciplinary action which may lead to dismissal. A student may be disciplined for violation of the rules as listed below. This includes but is not limited to:

- Failing grades (see Grading p. 30 for plan of action)
- Insubordination
- The conviction and or known use of, distribution of, or possession of illegal drugs or controlled substances.
- Failure of the student to accomplish clinical assignments and objectives.
- Unprofessional or unethical conduct
- Cheating
- Theft or misconduct
- Students are expected to be present all scheduled tours. All students are required to notify the program director of any anticipated absences or tardiness.
- Public display of disrespectful behavior towards supervisors, school officials, imaging personnel, other hospital staff, patients, or fellow students anywhere on hospital grounds or within the facility itself. This would include loud, threatening, abusive, or profane language. Any attempt to coerce or intimidate or interfere with supervisors.
- Public behavior of discourteous actions
- Failure to deal courteously and tactfully with others.
- Failure display sensitivity and concern for peers, department staff, school officials, public, patients
- Failure to comply with department dress standards, unacceptable personal hygiene, or grooming.
- Failure to wear identification nametag.
- Knowingly violating hospital safety rules
- Smoking in the hospital
- Failure to immediately report an injury (self/others) or incident (including theft). An incident is defined as any happening which is not consistent with the routine operation of the hospital or routine care of patients.

- Disturbing written or printed matter on hospital premises
- Interfering with the rights and privacy of fellow students, members of the medical staff, patients, visitors, or anyone associated with this hospital, including disrespect and displayed attitudes detrimental to patient care.
- Fighting on hospital grounds
- Theft or willful misuse, destruction or damage of patients, employees, students, or hospital property
- Sleeping on duty
- Falsifying hospital or employee/student records
- Falsifying timecards
- Inappropriate release of confidential information.
- Possession of any weapons, including firearms
- Violations of probation arrangements
- Intoxication/odor of alcohol
- Repeating a radiograph without direct supervision

As a member of the MVAHCS radiology team, which is dedicated to total patient care, it is important that students observe the program, department, and hospital policies and procedures. It is only through cooperative effort that total patient care is a reality. Therefore, it is only right that students be made aware of what types of infractions are serious enough to warrant disciplinary action.

### ***Program Progression Standards***

Failure of the student to attain, maintain and abide by any of the following criteria may cause the student to be counseled leading to probation. If at the end of this time the student shows no improvement, the student may be dismissed from the MVAHCS School of Radiography.

1. Achieve a grade of 80% or above in each course comprising the program.
2. Obtain a satisfactory rating on all clinical performance evaluations.
3. Able to perform the technical standards located in this handbook.

### ***Radiation Safety***

#### ***Radiation Badges***

A. Radiation badges are always worn at or close to the neck while on duty. If the student is wearing a thyroid shield or lead apron, the radiation badge is located on the outside of the protective lead apparel.

B. If you do not have your radiation monitoring badge (dosimeter):

1. You may be dismissed from clinical rotations for the day.



2. You may be sent home to get the badge and the time missed will be made up.
  3. You may be permitted in non-radiation areas.
- C. Accidental exposure of the radiation monitoring badge must be reported to program officials and the radiology supervisor immediately.
- D. Loss of a radiation monitoring badge must be reported to program officials and the radiology supervisor immediately. You will be removed from all radiation areas until a replacement radiation monitoring badge is obtained.
- E. Radiation monitoring badges are changed the first day of each quarter (every three months).
- F. Badges are always worn when a student is in the clinical setting.

*General Radiation Protection Policy and Procedures:*

To help ensure that all student radiologic technologists are learning in a safe working environment, a radiation physicist monitors the amount of radiation. Two radiation monitoring badges and holders are issued for each student. One worn during school hours, the second worn during working hours.

*ALARA Policy:*

The Radiologic Technology Program is committed to maintaining radiation exposure levels as low as reasonably achievable (ALARA) while still allowing each student to obtain all required clinical and didactic competencies. Student exposures will be maintained in compliance with NCRP Report N0. 105. Page 14: Education and training exposures (annual) for those under age 18; 1. Effective dose equivalent (1 mSv, 0.1 rem); above age 18; educational dose is equivalent to Occupational exposures (annual) 5rem (5000 mrem, 50 mSv.)

**Basic Radiation Safety\***

**AS LOW AS REASONABLY ACHIEVABLE (ALARA) PRINCIPLE**

*ALARA* is an acronym for "as low as reasonably achievable." This term is synonymous with the term optimization for radiation protection (ORP). The rationale for *ALARA* or *ORP* comes from evidence compiled by scientists over the past century. At the time of this publication, radiation protection guidelines remain rooted in the philosophy of *ALARA*. Therefore, this dictum, as low as reasonably achievable, should be a main part of every health care facility's personnel radiation control program. In addition, because

at this time no firm dose limits have been established for the amount of radiation that patients may receive for each individual imaging procedure, the ALARA philosophy should be maintained and must show that all reasonable actions that will reduce doses to patients and personnel to levels that are below those strictly required by regulations have been employed. Radiation-induced cancer does not appear to have a fixed threshold, that is, a dose level below which a person would have no chance of developing this disease, so the selection of exposure factors should always follow ALARA for all medical imaging procedures.

For many radiation regulatory agencies, the ALARA principle provides a method for comparing the amount of radiation used in various health care facilities in a particular region for specific imaging procedures.

### Cardinal Rules of Radiation Protection

The three cardinal (basic, central) principles of radiation protection are as follows:

- **Time**
- **Distance**
- **Shielding**

These principles can be applied to the patient and the radiographer. To reduce the exposure to the patient:

- **Reduce the amount of the x-ray "beam-on" time.**
- **Use as much distance as warranted between the x-ray tube and the patient for the examination.**
- **Specific area shielding devices may be required under some circumstances.**

Occupational radiation exposures, radiation exposure received by the radiographer while performing their professional responsibilities, can be minimized by the use of these fundamental principles:

- **Shorten the length of time spent in a room where x-radiation is produced.**
- **Stand at the greatest distance possible from an energized x-ray beam.**
- **Interpose a radiation-absorbent shielding material between the radiographer and the source of radiation.**

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

PRINT: \_\_\_\_\_

\* Statkiewicz Sherer, M. A. (2021). Chapter 1: Introduction to Radiation Protection. In *Radiation Protection in Medical Radiography* (9<sup>th</sup> ed., pp 6-7). S.1: ELSEVIER

#### *Radiation Exposure Records:*

Student/Faculty radiation exposure will be monitored during the entirety of the program and will be maintained by the Program Director. The most current radiation monitoring report will be kept by the RSO officer. The records are also maintained in the Imaging Department by the Minneapolis VAHCS Radiation Safety Officer. The Program Officials review the reports monthly. Infractions are dealt with in accordance with *Radiation Monitoring Devices* below. This Program does not accept students under the age of eighteen (18).

#### *Student and Staff Radiation Monitoring Devices:*

Quarterly Radiation Badges are provided for students and faculty – Control Badges are maintained by the Imaging Department and included with badges returned for reading. Radiation badges used during education clinical hours will be distinguished with the label 00114STU. These badges will keep record of radiation exposure readings acquired during the student’s education clinical experience. A separate badge with the 00114DIR label will be issued for students working after hours and on weekends as an employee. This will be done in order to distinguish and keep separate exposure readings acquired either as a student or as an employee. The student will be responsible for changing badges and wearing the appropriate badge as needed. Badges will be kept in the Results Processing wall holder.

#### *Compliance Responsibilities*

The student will:

- Wear the badge labeled 00114STU during education clinical hours. When working after hours and on weekends as an employee, the student will change the radiation badge to the 00114DIR label,
- Be responsible for changing badges and wearing the appropriate badge as needed,
- Take the extra time to assure they are properly protected under all circumstances (portable, fluoroscopy, etc.),
- Always wear the badge at neck level and outside the apron,
- Not allow their body to be in the primary beam,
- Not hold patients under any circumstances,
- Not use fluoroscopy to position patients,
- Take proper precautions with badges; do not leave it in the radiation area,
- Report lost or damaged badges to Program Officials immediately,

- Report to Program Officials any event involving byproduct, source, or special nuclear material used by the student that may have caused or threatens to cause any excess of exposure to student, staff, or the public.

Program Staff will:

- Monitor badge reports.
- The following plan will be followed if students' badges exceed allowable amounts within one (1) week of badge report review:
  - If the student's average Quarterly Dose is less than 50 mrem (0.5 mSv): no action taken.
  - If any dose above 50 mrem (0.5 mSv): discussion with student and possibly with the RSO officer. Each case will be dealt with as necessary.
- Should the reading continue to be high after the discussion, a Remediation Plan and Outcome Form will be completed and required discussion with the RSO will be implemented.
  - Level 1 – Exceeds dose limits of 10% or greater than 1.25mSv per calendar quarter: Counsel student with a remediation plan to lower dose and formal letter will be sent by RSO.
  - Level 2 – Exceeds dose limits of 30% or greater than 3.75 mSv per 3 calendar quarters: Counsel student with remediation plan to lower dose, time off will be recommended, and formal letter will be sent by RSO.
- Maintain Radiation Badge Audit Report
- Report all infractions (variances) to the RSO.
- In the event an unusual occurrence happens where any student or staff member is either exposed to a high dose of radiation in a single event or if the badge reading is exceptionally high, ensuring prompt investigation of each known or suspected case of substantial radiation dose level (SRDL) and determine the causes, take steps to prevent its recurrence, and monitoring such corrective actions.

*Annual Occupational Dose Limits:*

Any dose received must not exceed the annual occupational dose equivalent limits established by the Minnesota Code of Regulations and Nuclear Regulatory Commission regulations standard 10 CFR subpart C-Occupational Dose Limits 20.1

Dose Limit	Body Part	Dose Equivalent
<b>50mSv/year</b>	Whole Body	Total Effective Dose Equivalent
<b>500 mSv/year</b>	Extremities	Shallow Dose Equivalent

150 mSv/year	Lens of the eye	Eye Dose Equivalent
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To obtain previous records of radiation badge reading, the student must request that such information to be released by the program. Questions about radiation badge readings and radiation safety may be directed to the Radiation Safety Officer:

NAME: GREEN, JOSEPH  
 SERVICE | SECTION: DIRECTOR'S OFFICE | SAFETY  
 TITLE: RADIATION SAFETY OFFICER  
 OFFICE PHONE: 612.467.2620  
 MAIL CODE: 115

***Radiographic Markers***

Radiographic identification markers are a legally binding form of information and are used for radiographic examinations.

Upon starting clinical rotations, each student will receive one set of leaded right and left markers. Markers are available through the radiology department.

Markers are made using supplies in the Imaging Department.

The student is responsible for having their markers available each clinical day. If markers are lost, please make them with the supplies available. No student can use another student or technologist's markers.

***Relationships between Students, Staff, Patients, Former Patients and Patient's Families***

Students are encouraged to establish a warm and trusting environment at this Health Care System to enhance patient recovery and promote satisfaction with the care and services provided. However, to step beyond the bounds of professional courtesy in establishing relationships that go beyond the traditional customer/student relationship may constitute a boundary violation. An example would be establishing a personal or business relationship with a patient for personal gain.

Policy:

Student professional relationships with patients must be distinct from and not co-exist with personal or intimate social relationships with those same persons. The student must not provide direct services to a family member, business associate or a friend.

- a. The student must not establish or reestablish a personal or intimate social or business relationship with a patient, to which s/he provides direct services as

- part of their schooling at this Health Care System. Where such an outside relationship already exists prior to the patient seeking services, the student should not be in a position whereby they would be providing direct services to that patient unless this cannot be avoided for legitimate reasons.
- b. The student must not use his/her position to their personal and potentially unfair advantage of any patient with whom they have any relationship.
  - c. The student must not gain access to medical or other records of the patient for other than professional or therapeutic reasons.
  - d. The student must not accept gifts from patients.
  - e. Physical contact between patients and students is a powerful form of interaction and should only happen when the clinical situation warrants it. It should not be used as a matter of routine of clinical style. Sexualized touch is never appropriate. The policy recognizes the appropriateness of shaking hands and touch in the performance of clinical procedures.

Procedure:

- a. The student must report any pre-existing relationship with a patient (an example, neighbor or friend), that subsequently receives direct services from the students work area, in writing to his/her supervisor. The supervisor will offer direction and support and may do so in consultation with higher level managers.
- b. Where specific relationships are unclear concerning whether they are prohibited, the student or others knowing of the relationship will refer the situation to the student's supervisor. The supervisor will determine the action to be taken and may do so in consultation with higher-level managers.
- c. Students or others who become aware of a relationship, which appears to be a violation of the above prohibitions, will report the suspected violation immediately to their supervisor.
- d. Students receiving notes or expressions of affection, sexual interest, or provocation from patients, or who are experiencing difficulties in managing any aspect of therapeutic relationship, should immediately report to their supervisor. The supervisor will offer direction and support and may do so in consultation with higher management.

Addendum:

At no time will any student take any type of examination without a physician's order generated through the proper hospital channels. This is a hospital policy and will be strictly enforced. The student may, for practice purposes, during assigned ultrasound

rotation, practice ultrasound examinations. This can be done under the direct supervision of a registered technologist, trained in ultrasound on a non-patient. At no time is this to be done for a medically diagnostic purpose or without a qualified technologist's guidance.

### ***Returning Students***

Students who would like to return to the VA School of Radiologic Technology from a dismissal will need to do the following:

- Reapply to the school.
- Supply two additional letters of recommendation
- Supply additional transcripts if any additional coursework has been completed at another school.
- Provide an updated resume.
- Proceed through the normal process for admission:
  - Application
  - Interview
  - Selection
- All enrolled students may have access to the grievance policy as needed.

### ***Student Conduct***

1. MVAHCS is a smoke free facility. Designated areas are located adjacent to the building.
2. Chewing tobacco is forbidden in clinical and didactic areas.
4. Students can hold a part time job so far as the student's educational time is not jeopardized.
5. A student will never disclose privileged and/or confidential information about any patient at the MVAHCS or other clinical sites to patients, relatives, or friends. Student should refrain from discussing patient matters in hallways, cafeteria, or other places where they may be overheard and misunderstood.
6. All doctors are addressed properly and treated with respect without exception. Disrespect from a student to a faculty member, members of the imaging department, other physicians or patients are grounds for dismissal. Any infractions should be reported to program officials. Seek assistance for difficult and/or unfamiliar situations. A professional attitude must be developed and maintained by all members of the medical team.
7. The department or hospital does not tolerate disorderly conduct, loud talking, etc.
8. As a student, you are entitled to proper respect. If there are any concerns in this area, please notify the program officials.

### ***Student Participation***

Students have the status of “learner” in the radiography department. It is understood that students are guest of the hospital and are required to follow hospital, departmental, and school policies and procedures.

Students in the medical field have a direct responsibility to practice “medical ethics.”

Although a student may know and understand what is happening to a patient, they are neither trained nor capable of taking responsibility for making or interpreting radiographic images.

- a. Interpretation of radiology data should be referred to the radiologists, department supervisor, program director or staff technologist.
- b. Students do not prescribe treatment, medication, or give medical advice.
- c. Patient’s questions regarding their condition are to be referred to staff technologist or radiologist.

### ***Student Placement***

This program does not guarantee employment placement: however, every effort is made to assist the student in finding employment.

### ***Student Conferences***

Conferences are held quarterly with each student. The objective of the conference is to provide feedback to the student regarding their performance in the radiography program. Unscheduled conferences are arranged if the need arises. Students are encouraged to discuss questions, ideas or problems with the radiography school or hospital.

### ***Student Services***

1. Parking
2. The hepatitis series and flu vaccinations.
3. Tuberculin or QuantiFERON Tests
4. CPR training
5. Tutoring

### ***Tardiness***

Punctuality is an indication of dependability. Students must be in uniform and in their assigned areas at the start of their shift. This includes returning from lunch and breaks.

When a student is late, the clinical coordinator must be notified when the student arrives. If the student is going to be late, the coordinator must be notified by telephone. All time lost due to tardiness will be made up the same day. All make-up time is arranged with the clinical coordinator.



If a student arrives late for clinical two times within one quarter, the clinical coordinator will notify the program director and documentation will be made in the student's record.

Failure to call in or a no show for any reason:

- a. Results in suspension from clinical until the student has met with program officials.
- b. Next offense is dismissal from the program.

### ***Transfer Credits – No Advanced Placement***

Due to the sequential nature of all radiology didactic and clinical courses, as well as limited number of students, VA Radiologic Technology program does not accept transfer credits for radiology course work or clinical experience from any other radiologic technology program. Transfer credits for the required general education courses follow the rule of advanced placement as stated above. If an individual that has completed credits from another radiology program and intends to apply to the VA radiology program, they must apply for selection as all other applicants and complete all radiology courses and clinical in the same curriculum sequence.

### ***Technical Standards***

Please read the following statements identifying the technical standards appropriate to radiologic technology.

The student must have:

Sufficient eyesight to observe patients manipulates equipment and evaluates radiographic quality.

Sufficient hearing to assist patient needs and communicate verbally with other health care providers.

Sufficient verbal and written skills to communicate needs promptly and effectively in English.

Sufficient gross and fine motor coordination to respond promptly, manipulate equipment, lift a minimum of 30 pounds and ensure patient safety.

Satisfactory intellectual and emotional functions to exercise independent judgment and discretion in the safe technical performance of medical imaging procedures.

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The radiologic technologist must have sufficient strength and motor coordination required to perform the following physical activities:

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- Heavy Lifting - 45 pounds and over
- 
- Moderate lifting - 15-44 pounds
  - Light lifting – under 15 pounds
  - Moderate carrying 15-44 pounds
  - Pushing
  - Reaching above shoulder
  - Use of fingers
  - Both hands required
  - Walking 8 hours
  - Standing 8 hours
  - Repeated bending
  - Near vision correctable at 13" to 16" to Jaeger 1 to 4
  - Far vision correctable in one eye to 20/20 and to 20/40 in the other
  - Working closely with others
  - Working alone
  - Protracted or irregular hours of work
  - Working around machinery with moving parts
  - Working around electrical energy
  - Frequent reaching and manual dexterity in handling accessory equipment for diagnostic purposes
  - Frequent transporting, moving, lifting, and transferring patients from a wheelchair or stretcher to and from a radiographic table.
  - Ability to communicate clearly to instruct patients during procedures.
  - Process normal visual and audio acuity.
  - Hearing adequate to perceive and interpret patient and equipment signals.

### ***Telephone***

The telephones in the department are not to be used for personal calls unless they are for an emergency. No one may use the telephones for long distance calls.

The office staff is extremely busy and should not field personal phone calls. Please instruct all friends, relatives, and business associates that you may receive emergency calls only.

Cell phone usage is to be kept to a minimum. No phone usage during clinical or classroom instruction.

You are instructed in the use of the phone system during program orientation.

### ***Tuition and Fees***

Tuition: No cost. Students are considered student trainee/employee.

Background Checks: approximately \$55.00 per year

Books: \$1,500 - 2,000.00 – approximate for entire program.

Miscellaneous: Approximately \$50.00 per year – professional memberships, clinical record books, student bowl.

Minnesota Society of Radiologic Technologists (MNSRT) Student Membership: Approximately \$20 for a two-year membership while at student within the program.

Conferences: Approximately \$300.00 Conferences/Student meeting

Uniforms: Uniforms are approximately \$50.00 per set. Attire is the responsibility of the student with a minimum of 3 sets of scrubs in the designated color for the class. Appropriate shoes for the medical profession are required. Students may purchase a laboratory coat that matches the uniform.

American Registry for Radiologic Technologists (ARRT) Board Examination: Students are responsible for the approximate cost of \$225 for the ARRT exam.

Refunds: There are no refunds given to students who decide to quit the program or are dismissed.

### ***Uniform***

The student is required to comply with the scrub color selected by the program officials. Required hospital scrubs are mandatory for specific rotations, e.g., surgery. Scrub wear must be kept clean and neat.

If a student is chilled, a lab coat to match scrubs or a designated cover-up may be worn. Hoodies are not allowed. Undershirts can be white, black, or gray to be worn under scrubs. Any other colors or designs, the students may be asked to change.

### ***Withdrawal-D dismissal***

Students wishing to withdraw from the program must request withdrawal in a letter to the program officials. Students who withdraw or those asked to leave the program need to complete a Request for Personnel Action form to receive a checkout sheet. Items to be returned include MVAHCS issued PIV card, radiation monitoring badge (dosimeter), department key and any library materials and lead markers.

The school does not refund any money if a student withdraws or is dismissed.

### ***Workload and Release Time Policy for Faculty***

## **1. PURPOSE AND AUTHORITY**

a. The purpose of this memorandum is to establish policy for faculty workload and release time for the VA School of Radiologic Technology (SRT). This is for full-time faculty members of the SRT who possess skills in curriculum development, supervision, instruction, evaluation, and academic advising in the program.

b. This memo sets forth procedures and processes to ensure compliance with The Joint Review Committee on Education in Radiologic Technology (JRCERT) Standards for an Accredited Educational Program in Radiography Effective January 1, 2021, Adopted April 2020.

## 2. PROCEDURES

a. **Faculty Workload:** The Imaging Department leadership is authorized to use flexibility, as appropriate, in determining the structure of the workweek for faculty to recognize variations from traditional instructional formats such as afforded by online instruction, distance education, or other unique methods of instructional delivery.

b. **Preparation time:** Preparation for classes includes the following:

1. 2:1 hours of prep time per new course or new edition of text
2. 1:1 hour of prep time per class credit
3. 1:2 hours of prep time to lab credit

c. **Release Time and 40-hour workload:** Allows faculty to dedicate a portion of time to administrative or research and scholarship activities.

Allocation of faculty time to various functions are:

1. Instruction
2. Mentoring
3. Administration
4. Research/creative activity
5. Continuing Education

## 3. ASSIGNMENT OF RESPONSIBILITIES

Faculty Workload and Release Time are for full-time faculty.

a. **Program Director:** Responsibilities include program operations to oversee long- and short-range goals of program, accreditation, budget planning, maintaining knowledge of current professional curriculum and continued development of the program. Didactic responsibilities include supervision, instruction, evaluation, and

academic advising. Faculty are required to establish, monitor, and develop curriculum, course descriptions, policies and procedures used to evaluate student performance, processes of assessment and program evaluation.

b. **Clinical Coordinator:** Assigned the responsibility to correlate and coordinate clinical education with didactic education and evaluate its effectiveness. Didactic responsibilities include supervision, instruction, evaluation, and academic advising. Faculty are required to establish, monitor, and develop curriculum, course descriptions, policies and procedures used to evaluate student performance.

#### 4. DEFINITIONS

a. **Faculty Release Time.** When a faculty member is given approval to dedicate a percentage of their academic effort toward a specific project.

#### 5. REFERENCES

Joint Review Committee on Education in Radiologic Technology (JRCERT) Standards for an Accredited Educational Program in Radiography Effective January 1, 2021, Adopted April 2020. 3.1 The sponsoring institution provides an adequate number of faculty to meet all educational, accreditation, and administrative requirements.

#### 6. SIGNATORY AUTHORITY

**Mary Shaw,**

Operations Manager

Imaging Department

**Date Approved:** 12/2022

#### Handbook Revised:

3/27/00	8/11/05	2/21/08
9/18/00	1/9/06	2/28/08
10/02/00	6/5/06	5/8/08
12/19/00	9/11/06	9/21/09
3/01/01	9/28/06	8/16/10
5/15/01	12/20/06	8/19/11
5/12/02	1/8/07	9/5/12
5/29/03	1/25/07	6/11/13
5/1/04	2/2/07	11/5/13
12/8/04	2/27/07	4/7/14
3/8/05	8/24/07	5/21/15

4/6/16  
4/18/16  
3/03/18

8/28/17  
8/28/18  
01/07/19

01/06/23  
04/21/23  
03/21/24

***RADIATION SAFETY FOR MACHINE SOURCES OF IONIZING RADIATION FOR  
DIAGNOSTIC USE  
MCP EC-30D***

Minneapolis VA Medical Center Minneapolis, MN 55417

**Signatory Authority:** Minneapolis VA Health Care System Director

**Responsible Owner:** Radiation Safety Officer

**Rescinded Document:** MCP EC-30C

**Effective Date:** August 25, 2020

**Recertification Date:** August 25, 2025

**1. POLICY**

This medical center policy (MCP) establishes policy, responsibility, procedures, and guidance to ensure radiation protection and safety from machine produced ionizing radiation for all MVAHCS patients, visitors and employees.

**2. JUSTIFICATION**

This policy implements the requirements laid out by VHA directive 1105.04.

**3. RESPONSIBILITIES (per VHA 1105.04) a. VA Medical Facility Director.** If fluoroscopes are used at their medical facility, the VA Medical Facility Director is responsible for:

(1) Appointing an RSO in writing for machine sources at their medical facility to direct the radiation safety program and providing the name of the RSO to NHPP.

(2) Establishing a Radiation Safety Committee or other oversight committee as outlined in VHA Directive 1129

(3) Ensuring that a fluoroscopy safety training program is established and that such training is required in order to operate a fluoroscope. This includes a credentialing process that includes validation from the RSO that fluoroscopy safety training has occurred prior to credentialing an individual.

(4) Ensuring all Supervising Fluoroscopic Operators meet the requirements of this directive through the credentialing and privileging process.

(5) Ensuring that personal dosimeters and radiation protective apparel are provided to persons operationally exposed to radiation in a work environment in accordance with 29 CFR 1910.1096.

(6) Ensuring that fluoroscopes are used in rooms with structural shielding that prevents radiation exposure from exceeding allowed limits to employees and the general public in adjacent spaces.

(7) Promoting a safety culture where employees feel free to report radiation safety incidents and deficiencies through the chain of command without fear of reprisal.

(8) Ensuring the medical facility implements a technical quality assurance program that conforms to the elements in Appendix D the American College of Radiology-American Association of Physicists in Medicine (ACR-AAPM) Technical Quality Assurance in Fluoroscopic Imaging (<https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Fluoro-Equip.pdf>) and the Joint Commission standards of ionizing radiation. NOTE: This linked document is outside of VA control and may or may not be conformant with Section 508 of the Rehabilitation Act of 1973.

(9) Ensuring the facility is following the shielding as defined in Structural Shielding above.

(10) Ensuring the facility records doses to patients, reviews patient doses as part of the quality assurance program, performs patient follow-up, and reports of sentinel event and injuries as outlined in Appendix B and D.

(11) Reporting to NHPP radiation exposures to staff or members of the public that exceed regulatory limits.

b. **Radiation Safety Officer.** The RSO, with respect to fluoroscopy, is responsible for:

(1) Establishing and implementing radiation safety procedures commensurate with the use of fluoroscopy and reviewing them periodically to ensure their conformity with Federal radiation safety regulations and this directive.

(2) Ensuring regulatory standards for radiation safety and medical physics practices are followed throughout the facility (see references).

(3) Instructing personnel of requirements in Federal radiation safety regulations applicable to fluoroscopy and this directive, and proper radiation protection practices before first working with radiation; or making available a course of instruction for same.

(4) Conducting or supervising radiation surveys where indicated and to keep records of such surveys and tests, including summaries or corrective measures recommended or instituted.

(5) Ensuring that personal monitoring devices are issued as required by 29 CFR 1910.1096, that records are kept of the results of such monitoring, and that these monitoring reports are promptly reviewed to ensure that doses are ALARA and regulatory limits are not exceeded. NOTE: These records must be kept in a suitable organized file for the life of the facility. Spot checks that identify personal monitoring device discrepancies are reported to the individual's supervisor for the appropriate remediation actions.

(6) Ensuring that required signs and notices are properly posted.

(7) Ensuring the chain of command is aware of safety problems that reporting requirements are followed as outlined in Appendix D.

(8) Ensuring prompt investigation of each known or suspected case of SRDL (as defined above) and determine the causes, take steps to prevent its recurrence, and monitoring such corrective actions.

(9) Ensuring that required notifications and reports in the case of overexposures of personnel and sentinel events are submitted to the Medical Facility Director. (See Appendix D Notifying the facility Director promptly of any significant safety hazards or other significant violations of this directive, and exposures of staff or members of the public that exceed regulatory requirements.



(10) Reviewing or having a qualified expert review, prior to construction, plans for rooms in which ionizing radiation producing equipment is to be installed, including room layout, shielding, viewing, and communications systems. Performing, or having a qualified expert perform, radiation surveys after installation but before clinical use of the equipment. NOTE: For any room in which a fluoroscopic imaging system is installed, or in which a mobile fluoroscopic imaging system is frequently used, the doses to persons in adjacent areas, including any areas above and below, must be evaluated by a medical physicist or medical health physicist.

(11) Keeping records of training, and of signed preceptor statements. NOTE: For information regarding records management, see VHA Directive 6300 for records control.

c. **Facility Service Chief.** The Service Chief, where fluoroscopy is utilized, is responsible for:

(1) Ensuring there are defined written protocols, describing the technique factors to be selected, for each model of fluoroscope that is used and for each category of procedure to be performed on that fluoroscope. These may be in the form of a checklist used to ensure the proper selections at the beginning of each procedure.

(2) Ensuring that all personnel who work in the room where fluoroscopy is performed undergo radiation safety training. The training must be commensurate with risk to the staff. It must include the risks from exposure to ionizing radiation, requirements of this directive, facility requirements, and methods for maintaining doses to staff within established limits and ALARA, and for protecting the patient.

(3) Ensuring that appropriate staff performing or assisting with fluoroscopy wear dosimeters.

(4) Ensuring the service has written processes for the safe use of fluoroscopic equipment which includes the safety of the patient, operator and nearby staff and other personnel in close vicinity.

(5) Ensuring all radiation safety precautions are taken when personnel are using fluoroscopes for patients at the VHA medical facility, consistent with this directive and applicable Federal radiation safety standards and regulations.

(6) Ensuring appropriate safeguards for pregnant women. (See Appendix A 1b).

(7) Evaluating and certifying in conjunction with the RSO, whether the training received at the facility or elsewhere, meets the requirements defined in this directive by issuing a signed and dated memorandum stating the employee is qualified to operate fluoroscopes. However, this directive does not limit the ability of facility officers to prescribe additional training as deemed necessary.

(8) Recording the procedure to include dose metrics in a format such as a spreadsheet suitable for Quality Assurance (QA) review. (See Appendix D).

d. **Biomedical Engineering Service/Section.** The biomedical engineering service is responsible for: restoring the equipment back to the manufacturer's specifications prior to first patient use after repairs or service have been performed. NOTE: Facilities must establish written processes within the 30-day time frame to perform testing by a biomedical engineer or a service engineer to validate dose output and image quality. NOTE: Facilities must establish written processes to perform testing by a biomedical engineer or a service engineer to validate dose output and image quality following repairs, and to obtain a Medical Physicist inspection within 30 days of the repair.

#### 4. DEFINITIONS (per VHA 1105.04)

a. **Air Kerma Area Product.** Air kerma area product, also known as the dose area product, is a measure of air kerma multiplied by the cross-sectional area of the x-ray beam.

b. **As Low As Reasonably Achievable (ALARA).** ALARA means maintaining exposures to ionizing radiation to as low as is reasonably achievable, economic and social factors being taken into account.

c. **Backscatter.** Backscatter is the scattering of radiation back to the direction from which it came.

d. **Cinefluorography.** Fluoroscopy method to continuously record images of the internal anatomical structures of the human body.

e. **Cumulative Air Kerma at the Reference Point.** Also known as reference point air kerma and reference air kerma. It is the air kerma at a defined reference point in the center of the x-ray beam, intended to approximate the location of the skin of an average sized patient. It is displayed by all fluoroscopes manufactured since June 10, 2006. It accumulates during a procedure and can be used to estimate skin dose to the patient, although the peak skin dose and air kerma at the reference point may differ significantly. NOTE: Reference point locations are specified according to the type of fluoroscope and consistent with the definition found in 21 CFR 1020.32-Fluoroscopic Equipment.

f. **Diagnostic Radiological Physicists.** Diagnostic radiological physicists must be certified by the American Board of Radiology or have similar qualifications. Diagnostic radiological physicists perform acceptance testing and routine annual testing of diagnostic x-ray equipment to ensure an optimal balance between image quality and radiation exposure. Diagnostic radiological physicists design shielding for rooms housing x-ray imaging equipment and perform shielding acceptance surveys.

- g. **Dosimeter.** A dosimeter is a device that measures an absorbed dose of ionizing radiation, often referred to as a film badge.
- h. **Fluoroscopic Operator.** There are two types of Fluoroscopic Operator
- i. **Fluoroscopy.** Fluoroscopy is an imaging technique that uses an x-ray imaging system to provide real-time x-ray projection images.
- j. **Gray (Gy).** One Gy is a unit of absorbed dose and is equal to 1 joule per kilogram (1J/kg).
- k. **Kerma (K)/ Air Kerma.** K is a quantity defined by the International Commission on Radiation Units and Measurements. K is the sum of the initial kinetic energies of all the charged particles liberated by uncharged particles in units of joules, in a mass of material expressed in units of kilograms, where the special name for the unit of K is Gy. When the material is air, the quantity is referred to as “air kerma.”
- l. **Licensed Individual Practitioner (LIP).** A Licensed Individual Practitioner is one who is authorized to practice with defined levels of autonomy and exercise independent decision making within their scope of practice.
- m. **Medical Health Physicists.** Medical health physicists must be certified by the American Board of Medical Physics (ABMP), the American Board of Science in Nuclear Medicine (ABSNM), or the American Board of Health Physics (ABHP) or have similar qualifications. Diagnostic Medical Health Physicists may serve as Medical Health Physicist and often as the facility’s Radiation Safety Officer (RSO); they are specialists in radiation safety, which includes safe transport, custody, use, and disposal of radionuclides; inspections and area monitoring; and personal dosimetry. Medical health physicists protect staff, patients, and the public from ionizing radiation, and provide education in the safe use of x-ray producing equipment.
- n. **Medical Physicist.** A medical physicist is a physicist working in medicine. Three medical physics specialties that may be involved in fluoroscopy are: diagnostic radiological physicists, therapeutic radiological physicists, and medical health physicists.
- o. **Peak Skin Dose.** The peak skin dose is the largest dose imparted to the skin and takes into account dose from x-rays backscattered in the patient.
- p. **Potentially High Radiation Dose Procedure.** A potentially high radiation dose procedure is a fluoroscopically-guided procedure with the potential to cause a clinically-significant radiation skin injury. It can be formally defined as a fluoroscopically guided procedure for which more than 5% of cases of that procedure result in a cumulative air kerma exceeding 3 Gy or an air-kerma-area product exceeding 300 Gy cm<sup>2</sup>.
- q. **Qualified Expert.** A qualified expert is a medical physicist or medical health physicist who is competent to design radiation shielding in medical x-ray facilities and may perform

shielding calculations and radiation surveys after installation but before clinical use of the equipment.

r. **RAD.** A rad is a traditional unit of absorbed dose, equal to 0.01 J/kg of matter. One hundred rad is equal to a Gy.

s. **Radiation Safety Officer.** The individual designated the responsibility to oversee the day-to-day operations of the facility radiation safety program, which includes radioactive materials and machine producing ionizing radiation.

t. **REM.** A rem is a traditional unit of effective dose and effective dose equivalent, equal to 10 millisieverts (mSv). Rem and sievert (Sv) are units of dose that are used when describing the biological effects of radiation in terms of risk.

u. **Sievert (Sv).** A Sv is unit of effective dose and effective dose equivalent. Like Gy, it measures absorbed radiation; Sv is corrected for the carcinogenic risk of the tissues that have been exposed.

v. **Structural Shielding.** Structural shielding is shielding provided by a building's structure (e.g., concrete walls and floors), or that is installed (e.g., lead sheets installed in walls) as necessary to maintain doses to persons in adjacent areas ALARA and within regulatory limits. The design of shielding for and acceptance testing surveys of imaging rooms must conform to National Council on Radiation Protection and Measurements (NCRP) Report No. 147. The shielding design calculations, as-built shielding plans, and the report on the acceptance testing of the structural shielding must be kept for the duration of use of the room for x-ray imaging.

w. **Substantial Radiation Dose Level (SRDL).** An SRDL is defined as a peak skin dose of 3Gy or, if the peak skin dose is not known, a reference point air kerma of 5Gy. It is a level of radiation dose to a patient that, if exceeded, triggers specific follow-up actions. The exceedance of an SRDL must cause notification of the patient and follow-up regarding a possible clinically significant radiation injury. It does not indicate that such an injury will occur or is highly likely. NOTE these match SIR guidelines and NCRP report 168.

x. **Supervision of Fluoroscopy Procedures.** This term is defined by three levels of supervision and consistent with 42 CFR 410.32, as follows:

(1) General Supervision. The service is furnished under the overall direction and control of the fluoroscopic physician, but his or her physical presence is not required during the procedure.

(2) Direct Supervision. The fluoroscopic physician must be present on the same campus and immediately available to furnish assistance and direction throughout the performance of the procedure. "Immediately available" means "interruptible and able to furnish assistance and direction throughout the performance of the procedure but without reference to any

particular physical boundary." The physician does not have to be in the room when the procedure is performed.

(3) Personal Supervision. The fluoroscopic physician is present in the room when the service is being performed. The supervisory responsibility is more than the capacity to respond to an emergency. It includes the ability to take over performance of a procedure and to change a procedure or the course of care for a particular patient.

## 5. INSTITUTIONAL POLICY AND PROCEDURES

### a. Radiation Dose Standards for Individual Workers in Restricted Areas.

(1) Radiation limits per calendar quarter from OSHA 1910.1096(b)(1):

*Table 1 - Quarterly occupational dose limits*

Anatomic location	Effective Dose
Whole body: Head and trunk; active blood forming organs; lens of eyes; or gonads	1 1/4 REM
Hands and forearms; feet and ankles	18 3/4 REM
Skin of whole body	7 1/2 REM

(2) Pregnant workers: When a woman declares her pregnancy in writing, this institution will: provide a dosimeter to be worn at the level of the abdomen and under any lead shielding worn; ensure the total effective dose equivalent to the embryo/fetus does not exceed 0.5 rem (0.005sv) during the entire pregnancy; and ensure a reasonable effort is made to avoid substantial variation above a uniform monthly exposure rate.

### b. Prohibited Uses of Radiation

(1) General Provisions: No individual shall be exposed to the useful beam unless it is medically necessary (for "healing arts purposes") and the exposure has been authorized by a licensed ordering clinician. In the Minneapolis VA Health Care System, the order for a radiographic examination can only be made by a physician, dentist, podiatrist, osteopath, or a physician assistant or advanced practice registered nurse whose scope of practice agreement permits them to order such exams. *Note:* Any exposure of an individual for the following other purposes is prohibited:

(a) Exposure for training, instruction, demonstration, or research that has not been approved by the Institutional Review Board and that does not meet federal regulations for the protection of human subjects in research

(2) Prohibited Radiation Producing Equipment and Procedures. The following x-ray equipment shall not be used, and the specified procedures will not be performed:

(a) The use of fluoroscopy by a person other than a licensed ordering clinician who has documented privileges and radiation safety training, when ordering clinician is not physically present in the room (unless it is for maintenance activities or training courses);

(b) The use of direct exposure x-ray film (without intensifying screens) for all radiological imaging other than intraoral dental radiography.

(c) Dental intraoral radiography units operating at 50 kVp or less;

(d) The use of mammographic imaging systems not specifically designed by the manufacturer for imaging of the breast.

(3) Unauthorized Exposure of Personnel Monitoring Dosimeters. Exposure of personnel monitoring dosimeters to deceptively indicate a dose delivered to an individual is prohibited.

### **c. Safety Requirements**

(1) X-ray System Compliance. An x-ray system that is not functioning properly shall not be operated for diagnostic purposes.

(2) Individuals Who May Apply Fluoroscopic Radiation. All use of fluoroscopy must be performed by or supervised by a Supervising Fluoroscopic operator (as defined by VHA directive 1105.04). Note: An individual participating in a training course for physicians, dentists, chiropractors, podiatrists, radiologic technologists, chiropractic radiologic technologists, dental hygienists, or dental assistants are exempt from this requirement for the duration of the training course. The exemption applies to activities conducted within the scope of the training course.

(3) Procedure and Safety Instruction. All individuals who operate an x-ray system must be initially instructed and annually retrained in facility-specific and system-specific safe operating procedures and quality assurance procedures. Annual retraining shall include but is not limited to review of this document.

(4) Radiographic Technique Charts. If the radiographic technique factors are not included as part of the individual x-ray system, a hard copy of the radiographic technique chart shall be provided near that x-ray system's control panel. The chart will specify, for all examinations performed with that system, the following information:

(a) The patient's anatomical size and corresponding technique factors to be used.

(b) For dental intraoral radiography, the type of the screen-film combination or direct exposure x-ray film to be used.

(c) The grid focal distance and the grid ratio to be used, if any.

(d) The source-to-image receptor distance to be used.

(e) For automatic exposure control (AEC) or photo timed units, the percent differences between the AEC increments.

(f) For computed tomography systems, a current list of protocols for each routine examination.

(5) Limiting and Addressing Radiation Exposure to Patients. There are no regulations limiting the radiation dose to the patient and it has long been assumed that the benefits of the procedure outweigh the risks of radiation exposure. However, the Food and Drug Administration's Center for Devices and Radiological Health has received reports of occasional, and at times severe, radiation-induced skin injuries consistent with radiation burns to patients from long, invasive procedures utilizing fluoroscopy. Therefore, mechanisms and quality control processes need to be in place to ensure the equipment delivering the radiation is not defective. In addition, staff delivering and operating the radiation producing equipment must have the proper competency and/or privileges to safely deliver the radiation.

(a) Physicians must be made aware of the potential for serious radiation injuries and that the onset of these injuries is usually delayed. The effects of radiation may not appear until weeks following the exposure and damage cannot be discerned by observing the patient immediately after the procedure. Therefore, physicians performing such procedures will:

1. Inform pre-menopausal female patients of the risks of radiation exposure to an embryo or fetus and be afforded the opportunity to be tested for pregnancy if they are unsure about their current condition.

2. Assess the risks and benefits on a case-by-case basis, considering variables such as age, beam location and direction of the beam, tissues in the beam, previous exposure (such as fluoroscopy, CT, or radiation therapy), and any condition that might significantly lower the threshold for radiation injury (as described in VHA Directive 1105.04 Appendix A)

3. Justify and limit the use of high-rate modes of operation.
4. Modify the procedure as appropriate to limit the cumulative absorbed dose.
5. Report any observed injuries as required by the Safe Medical Devices Act of 1990. Medwatch 1-800-FDA-1088 or at [www.fda.gov/MedWatch](http://www.fda.gov/MedWatch). Additionally, any exposure that results in permanent skin damage (including permanent epilation of the head but excluding permanent epilation of the trunk and extremities), must be reported to the manufacturer of the fluoroscopic equipment and the FDA as required by 21 CFR 803. Any exposure resulting in skin injury that requires surgical repair must be reported to the VHA National Health Physics Program.
6. Document in the study/procedure performed, any radiation doses incurred during fluoroscopy or a CT exam. Additionally, the cumulative fluoroscopy dose to similar anatomy for the past 6 months must be included in the final dictation for all fluoroscopic studies. As stated above, the dose and location of any recent external beam radiation therapy should be considered before the procedure but does not need to be included in the dictation.
7. Report to the facility Patient Safety Manager (by way of incident report or phone call) and the RSO or Diagnostic Physicist any significant error, malfunction, or abnormal occurrence or near miss.
8. Clinical follow-up/management should be performed per the guidelines of VHA directive 1105.04 Appendix B. These are summarized in the table below. The numbers listed are for the Cumulative Air Kerma (mGy) dose over the last 6 months. Clinic notes for patients seen for Substantial Radiation Dose Level will need to include the RSO as a co-signer.
9. Substantial Radiation Dose Level (SRDL) Report. Any procedure with a skin dose greater than 3 Gy will need a post-procedure SRDL report (attached in Appendix A of this policy) filled out and submitted to the RSO office. The appropriate follow up should be arranged before submitting the form. This form should be submitted to the RSO within 2 business days of the procedure.

Table 2 - Guidelines for management after >3 Gy skin dose of ionizing radiation



	<3 Gy	3-5 Gy	5-15 Gy	>15 Gy
<ul style="list-style-type: none"> <li>• <b>None required. Skin injuries should not occur.</b></li> </ul>	X			
<ul style="list-style-type: none"> <li>• <b>Provide patient with verbal instructions on possible skin injuries (erythema, hair loss).</b></li> <li>• <b>Document air kerma (mGy) and beam entrance locations.</b></li> <li>• <b>Document skin appearance</b></li> </ul>		X	X	X
<ul style="list-style-type: none"> <li>• <b>Arrange follow up appointment with referring physician in 4-8 weeks.</b></li> <li>• <b>Inform RSO and Diagnostic Physicist.</b></li> </ul>			X	X
<ul style="list-style-type: none"> <li>• <b>Sentinel Event.</b></li> <li>• <b>Report to National Rad Safety Committee (NRSC) and Patient Safety Manager.</b></li> </ul>				X

(6) Exposure of Individuals Other Than Patients.

(a) Except for the patient, only the staff and ancillary personnel required for the medical or dental procedure or training shall be in the room during the radiographic exposure.

(b) All staff and ancillary personnel required for assistance with the radiographic procedures shall be positioned so no part of the body, including the hands, will be struck by the primary beam.

(c) All staff and ancillary personnel who must remain in the room to assist during radiographic, fluoroscopic, portable, or computed tomography procedures must be protected from scattered radiation by protective aprons or whole body protective barriers of not less than 0.5 millimeter lead equivalence.

(d) Patients and individuals who are not involved in diagnostic radiographic procedures or demonstrations using either stationary or portable x-ray equipment--who cannot leave the room and who cannot be protected by adequate distance for the exam being performed--must be protected from scattered radiation by protective lead aprons or whole body protective barriers of at least 0.25 millimeters lead equivalence.

(e) Any door which is part of the protective barrier must be closed during the operation of a machine which produces ionizing radiation.

(f) Leaded goggles/glasses/face mask must be worn by operators during fluoroscopy per the guidelines of VHA directive 1105.04 Appendix C.

(7) Holding. When a patient, imaging cassette, or intraoral film must be provided with auxiliary support during a radiation exposure, mechanical holding devices shall be used when the technique permits. No individual shall be used routinely to hold intraoral film, imaging cassettes, or patients. If it is necessary for an individual to hold the patient or equipment, an individual not normally exposed to radiation will be selected to hold. The human holder must be protected by lead apron and gloves. Any portion of the body, other than the area of clinical interest struck by the useful beam, shall be protected by not less than 0.5-millimeter lead equivalent material.

**d. Radiological Practice Standards** (1) Portable x-ray equipment shall be used only for examinations where it is impractical to transfer the patient to a stationary x-ray system.

(2) Radiographic systems other than fluoroscopic, dental intraoral, and dental panoramic systems must not be used in procedures where the source-to-skin distance is less than 30 centimeters.

(3) Protective aprons and gloves shall be monitored annually for lead protection integrity according to the facility SOP kept in the Radiation Safety Office. A record of the monitoring shall be maintained by each section/PSL and submitted to the Radiation Safety Office for review by the Radiation Safety Committee.

(4) Fluoroscopic x-ray equipment should be used only in designated rooms that have been evaluated for shielding requirements by the Diagnostic Physicist and/or RSO. The Engineering department shall inform the Diagnostic Physicist and/or RSO of any new construction or remodel of any room used for x-ray procedures to ensure a structural radiation shielding design is performed. The RSO and/or Diagnostic Physicist shall perform an appropriate radiation survey of any new or repaired structural radiation shielding prior to the start of clinical x-ray procedures. Alternatively, the RSO or Diagnostic Physicist can review the shielding calculations provided by a vendor.

(5) A complete x-ray compliance test in accordance with the applicable parts of Title 21 of the Code of Federal Regulations (CFR), subchapter J (Part 1020), shall be conducted annually (and after any repairs that may affect the radiation output) on all x-ray producing machines used by Minneapolis VA Health Care System in patient care. The compliance test will be done by the Diagnostic Physicist or their designee, who will notify Biomedical

Instrumentation Service (BIS) of any deficiencies identified during the annual or initial compliance testing. The vendor or BIS will correct the identified issues and notify the Diagnostic Physicist when the system is ready for re-inspection. Copies of the reports will be kept by either the Diagnostic Physicist or RSO. These reports will be available for review upon request.

(6) Biomedical Instrumentation Service shall ensure x-ray equipment is in compliance after any repair or maintenance done by BIS staff or contracted representatives before releasing the system back into clinical use. BIS may contact the Diagnostic Physicist in the event that secondary confirmation of normal system function is desired.

(7) In the event a malfunction (error message) occurs during a procedure, the decision to terminate the procedure is the responsibility of the radiologist/physician in charge.

(8) X-ray technologists shall adhere to the Calibration/Quality Assurance test schedule as prescribed by the vendor and/or Biomedical Instrumentation Service to ensure that the X-ray system is functioning as designed, within expected parameters.

(9) X-Ray technologists shall ensure that only the intended patient is exposed to the direct beam. Other staff members, patients and visitors should be at least 3 meters away from the x-ray source or outside of the room if possible.

(10) Gonad protection. Gonadal shielding is no longer performed, per the AAPM Position Statement on the Use of Patient Gonadal and Fetal Shielding (policy PP 32-A) and the MVHCS Shielding Patients in General Radiology (July 2019).

(11) Before starting a procedure/examination, the Supervising Fluoroscopic Operator (SFO) must be familiar with the safe operation of the fluoroscopic to be used. Every fluoroscopic room and every mobile fluoroscope will have a sign off sheet (attached in Appendix B of this policy). This sheet will indicate which SFO's have been oriented to the machine. Before every examination/procedure, the technologist involved will reference this sheet. If the SFO is not listed, the technologists will orient the clinician then add his or her name to the sheet.

#### **e. Fluoroscopy Credentialing and Privileging**

(1) It is essential to keep the Radiation Safety Committee up to date on who is privileged to use fluoroscopy in the hospital. The following workflow will be observed for granting fluoroscopy privileges:

(a) SFO candidate completes required TMS training and applies for fluoroscopy privileges

(b) Applicant is granted fluoroscopy privileges through the established Medical Staff Process (i.e., approval by the Credentialing Committee, CMS and Director). Note: Completion of mandatory TMS training will be validated as part of this process.

(c) If approved, a copy of the fluoroscopy Focused Professional Practice Evaluation (FPPE) is sent to the RSO. Receipt of this FPPE serves to notify the RSO that TMS has been completed, fluoroscopy privileges have been granted, and the physician must now complete the FPPE, including “hands on training,” precepting, and annual radiation safety training.

(d) The physician undergoes fluoroscopy FPPE, including “hands on training,” precepting, and annual radiation safety training. The completed FPPE is then sent to the Medical Staff Office for presentation to the Credentialing Committee and ECMS.

(e) When complete and approved by the ECMS, all FPPE forms related to fluoroscopy go to the RSO for presentation at the next Radiation Safety Committee (RSC) for final approval. Credentialing will be notified of the RSC decision.

#### **f. PACS and Digital Quality Control Requirements**

(1) Computed Radiology imaging plates and screens are cleaned following manufacturer’s recommendation when visibly in need, and on a monthly schedule. All imaging plates are primary erased weekly to ensure consistency. Documentation is kept in the Imaging Department.

(2) Calibrations are performed daily, biweekly and or monthly as required by the manufacturer. Documentation of the procedures on individual equipment is kept within the owning department.

(3) Repeat rates are to be reviewed on a quarterly schedule. Corrective action/education will be documented within the owning department.

(4) Lead aprons are to be cleaned by technologists when visibly soiled. Documentation will be kept within the owning department.

(5) Monitor calibration and testing will be done yearly by the Biomedical Instrumentation Service and documented in the department with service logs.

#### **g. Personnel Monitoring, Placement of Dosimeters and Control Dosimeters.**

The determination of issuing a personnel dosimeter to an employee shall be made by the RSO according to OSHA 1910.1096(d)(2) or on a case-by-case basis. Employees shall fill out the Badge Request Form and submit it to the Radiation Safety Office to receive a dosimeter. It is the responsibility of each employee issued a personnel dosimeter to wear it as required. When protective clothing is worn and personnel monitoring dosimeters are required, at least one such dosimeter shall be worn as follows:

(1) When a protective apron is worn, the personnel monitoring dosimeter shall be worn at the collar outside of the protective apron.

(2) When more than one personnel monitoring dosimeter is used, the record shall identify the location of the monitor on the body.

(3) Every worker is expected to turn in his or her dosimetry badge at the end of the month. A new badge should be claimed at that time.

**h. Ordering of Radiographic Examinations.** The following requirements must be met:

(1) The order for a radiographic examination can only be made by a physician, dentist, chiropractor, podiatrist, osteopath, or a physician assistant or advanced practice registered nurse whose scope of practice agreement permits them to order such exams.

(2) The order for a radiographic procedure must include clearly stated clinical indications for the examination and be available to procedure personnel at the time of the examination.

**i. Radiation Protection for Women of Child Bearing Age**

(1) Exposure to Pregnant Workers. The National Council on Radiation Protection and Measurements has recommended reducing radiation exposure to pregnant workers to 500 mR (0.005 Sv) during the gestation period and to 50 mR (0.0005 Sv) during any month of pregnancy. The Minneapolis VA Health Care System has also adopted the 50 mR (0.0005 Sv) per month requirement to protect workers at the Minneapolis VA Health Care System and follows the same procedure used by the Nuclear Regulatory Commission for radioactive material workers. If an employee becomes pregnant and wishes this added protection the employee must contact her supervisor and declare her pregnancy in writing. If the declaration of pregnancy form does not get submitted to the Radiation Safety Office, the dose limits listed in section 2A will remain in effect. When pregnancy is declared, the employee's radiation history will be reviewed to determine if any special precautions, monitoring, or change of duties are needed.

(2) Exposure to Pregnant Patients. At the Minneapolis VA Health Care System:

(a) Signs must be posted in the radiology waiting room notifying potentially pregnant women to tell the x-ray technologist of their condition.

(b) Technologists will ask all women of childbearing age if they are or think they may be pregnant before proceeding with any x-ray examination.

(c) If the patient replies affirmatively, the technologist will contact the ordering physician before proceeding with the exam.

(d) If the ordering physician is not available, the technologist will request the staff or resident radiologist to determine if the exam should be performed.

#### **j. Privileging and Competency Requirements for Staff Involved with Radiation Outside of the Imaging PSL**

(1) Physicians who work outside the Imaging PSL--who wish to administer radiation in procedural areas outside of Radiology may not do so unless they have requested and been granted the appropriate privileges. Note: Their supervisors are responsible for ensuring validation of competency upon request for initial privileges and every two years thereafter (at the time of privilege renewal).

(2) Nurses and other non-physician staff--who assist with radiographic procedures outside of the Imaging PSL must have validated competencies in order to perform these functions. Their supervisors are responsible for ensuring such competencies are updated annually and the Diagnostic Physicist or designee is responsible for validating competency.

#### **6. REFERENCES**

- a. VHA Directive 1105.04. FLUOROSCOPY SAFETY. June 21, 2018.
- b. American College of Radiology. ACR technical standard for management of the use of radiation in fluoroscopic procedures. Practice Guidelines and Technical Standards 2008. Reston, VA American College of Radiology: 1143-1149, 2008

#### **7. RESCISSION**

MCP Policy #EC-30C, Radiation Safety for Machine Sources of Ionizing Radiation, dated March 19, 2018.

#### **8. REVIEW**

Per recertification

#### **9. RECERTIFICATION**

This MCP is scheduled for recertification on or before the last working day of August 25, 2025. This MCP will continue to serve as local policy until it is recertified or rescinded. In the event of contradiction with national policy, the national policy supersedes and controls.

#### **10. SIGNATORY AUTHORITY**

Patrick J.  
Kelly 691790

Digitally signed by Patrick  
J. Kelly 691790  
Date: 2020.08.26  
06:34:21 -05'00'

Patrick J. Kelly, FACHE  
Director, Minneapolis VA Health Care System

**NOTE:** *The signature remains valid until rescinded by an appropriate administrative action.*

**DISTRIBUTION:** Emailed to the Minneapolis VAHCS Supervisors and Nursing Supervisors Distribution List August 25, 2020. MCPs are available at:  
<https://dvagov.sharepoint.com/sites/min/SiteDirectory/Policies/default.aspx>