



## **Radiologic Technology Program**

### **Radiation Safety and Protection Program**

Name of Program: Charles R. Drew University of Medicine and Science  
College of Science and Health

Program Number: 1029

Name of Program Director: Eugene Hasson, M.S., R.T. (R)

Telephone: 323.563.5885

Fax: 323.347.3419

Last Review June 3, 2016

## **Table of Contents**

List of Exhibits .....	3
Introduction .....	4
Item One: Organization and Administration .....	5
Summary for Item One .....	6
Item Two: ALARA Program .....	7
Summary for Item Two .....	8
Item Three: Dosimetry Program .....	9
Summary for Item Three .....	10
Item Four: Area Monitoring .....	11
Summary for Item Four .....	12
Item Five: Radiological Controls .....	13
Summary for Item Five .....	14
Item Six: Emergency Exposure Situations and Radiation Accident Dosimetry..	15
Summary for Item Six .....	16
Item Seven: Record Keeping and Reporting .....	17
Summary for Item Seven .....	18
Item Eight: Reports to Individuals .....	19
Summary for Item Eight .....	20
Item Nine: Training .....	21
Summary for Item Nine .....	22
Item Ten: Internal Audit Procedures .....	24
Summary for Item Ten .....	25

## **List of Exhibits**

Exhibit 1.1a	Authority and Responsibilities of the University Radiation Safety Committee
Exhibit 1.1b	Appointment Letter
Exhibit 1.1c	Organization Chart
Exhibit 2.1a	Powerpoint Presentations and ALARA Program
Exhibit 2.1b	Outline of Major Program Points (Video)
Exhibit 2.1c	Copy of Videos, Quizzes and Certificates
Exhibit 2.1d	Radiation Safety Sign-in Sheet
Exhibit 3.1a	Radiation Dosimetry Report
Exhibit 3.1b	Dosimetry Badge Sign-in Sheet
Exhibit 3.1c	Policy and Procedure Manual
Exhibit 4.1a	Instrument List
Exhibit 4.1b	Machine Maintenance
Exhibit 5.1a	Title 17
Exhibit 6.1a	Accident and Incident Form
Exhibit 8.1a	Form RHB-2364
Exhibit 9.1a	Guideline for Radiation Safety Instructions
Exhibit 9.1b	Organization Chart for Strategic and Operations Planning

## **Introduction**

The Radiologic Technology Program's first on-site class began in January of 1974. The first class associated with Charles R. Drew University began in March 1970 from Compton College prior to the opening of the King/Drew Medical Center. This made the Radiologic Technology Program the second oldest and second largest program behind the CDU Physicians Assistants Program. CDU began providing technical staff for the radiology department at KDMC.

There are currently 54 students in the program. Students selected for candidacy into the program have met the program prerequisite requirements and are interviewed by the faculty and staff. Selection for admission is based upon GPA and other factors. Students are provided, after being accepted into the program, with a program policy and procedures manual outlining program, college and university policies.

The current Associate of Science degree program in Radiologic Technology serves as the foundation for advanced imaging modalities which this program is highly capable of offering. It is designed to prepare the student for employment as an entry-level radiologic technologist after two years of didactic and clinical and professional education.

Student commitment during the two years of enrollment involves a maximum of forty (40) hours per week of combined didactic, supervised clinical and professional education courses.

Upon completion of the program, graduates become eligible to take the examinations from the State of California Department of Public Health Radiologic Health Branch and the American Registry of Radiologic Technologist (ARRT) and hold the titles of Certified Radiologic Technologists (CRT) and Registered Technologist in Radiography R.T.,( R).

The Associate of Science degree in Radiologic Technology in the College of Science and Health is under the sponsorship of the Charles R. Drew University of Medicine and Science under the leadership of President David M. Carlisle, M.D., Ph.D. The College of Science and Health is under the leadership of the current Dean Hector Balcazar, Ph.D.

The Radiography Program is approved and authorized to continue to offer Diagnostic Radiologic Technology Program and a Radiologic Technologist Fluoroscopy Permit Program by the State of California Department of Public Health Radiologic Health Branch.

The Radiography Program received the maximum eight years accreditation in 2012 from The Joint Review Committee on Education in Radiologic Technology (JRCERT). An interim report is due November 2016.

**Item One:**  
**Organization and Administration**

## **Item One: Organization and Administration**

### **Summary for Item One**

**The program, in support of item one, has delegation of its radiation safety and protection program beginning with the president of the university. The radiation safety officer and the radiation safety committee form the remaining active part of the committee. The Radiography program director is an active member on this committee which has been formed in response to a request by the president of the university and The Department of Public Health. Applications, background checks and award letters were all a part of the formation of the university radiation safety committee. The committee has authority by virtue of the requirements of the federal and state regulations to implement and follow the operational practices and the governance procedures for the implementation of the University Radiation Program. The committee has additional authority as set forth in 10 CFR 20; California Administration Code, Title 17 section 30100-30380.**

#### **Exhibits:**

- 1.1a Authority and Responsibilities of the University Radiation Safety Committee
- 1.1b Appointment Letter
- 1.1c Organization Chart

#### **Major Strengths of Item One:**

1. The University has in place a very active Radiation Safety Committee with very knowledgeable individuals including researchers, professors and technologist.
2. There is strong support from the university president's office for the execution of safety procedures as well as academic and clinical research.

#### **Major Concerns of Item One:**

1. No concerns.

**Item Two:**  
**ALARA Program**

## **Item Two: ALARA Program**

### **Summary for Item Two**

**The program in its curriculum inculcates the practice of procedures to keep exposure to the technologist and patient ALARA in the following lectures and assignments as well as the mandatory viewing and test on two Radiation Safety DVD'S.**

- A) Radiation Protection Concepts and Equipment**
- B) Radiation Protection Procedures for Patients and Personnel**
- C) Filtration**
- D) The Prime Factors**
- E) X-ray interactions**
- F) Minimizing Patient Dose**
- G) Beam Restriction**
- H) The Patient as a Beam Emitter**

#### **Title of DVD's:**

##### **Exhibits:**

- 2.1a Powerpoint Presentations and ALARA Program
- 2.1b Outline of Major Program Points (Videos)
- 2.1c Copy of Videos Quiz and Certificate
- 2.1d Radiation Safety Sign-in Sheet

#### **Major Strengths of Item Two:**

1. The ALARA program has been developed and is being implemented in the clinical and didactic setting. Understanding of the ALARA principle is evaluated in the 10<sup>th</sup> week, first spring semester of the RAD 112 Principles of Radiation Exposure I class.  
Unit II: Protecting Patients and Personnel (Chapter 9: Radiation Protection Procedures for Patients and Personnel. Page 158)  
Textbook: Principles of Radiographic Imaging 5<sup>th</sup> Edition, Carlton and Adler, 2013  
It is also discussed in The Radiation Safety Videos in the first fall semester and understanding is tested in The Quiz for Radiation Safety for Medical Personnel (Question #9)  
2014 Testing results 100% understood the principle of ALARA.

#### **Major Concerns of Item Two:**

1. There are no concerns for the ALARA program.



**Item Three:**  
**Dosimetry Program**

## **Item Three: Dosimetry Program**

### **Summary for Item Three**

**Students and instructors in the radiography program are instructed in the use of ionizing radiation and its detrimental effects. They are also educated on the different types of patient and personnel protective devices as well as field survey instruments and personnel monitoring devices. The program uses the Landauer Luxel Optically Stimulated Luminescence (OSL) Dosimeter. All students and instructors are educated in the use of devices and the control badge. The badge is exchanged monthly.**

**In the lecture on Radiation Protection and Procedures for Patients and Personnel students are made aware that the effective dose limit for individuals in educational programs is the same as the general public and that is one-tenth of the occupational dose of radiation workers (50mrem). A monthly Radiation Dosimetry Report is obtained from the dosimeter provider to ensure students are not exceeding the dose limit. The RSO receives a copy of the program's dosimetry reports. A pregnancy policy is also in place and is located in the student's orientation Policy and Procedure Manual (pgs. 26-28). If a student declares a pregnancy, they will have to consult with their physician, the RSO and the program director. A fetal badge is also assigned to the pregnant worker to maintain documentation of the dose to the embryo/fetus. A student has the right to withdraw the declaration of pregnancy using a copy of the same form.**

**The RSO conducts a lecture on dosimetry badges, dose, reports and pregnancy policy in the introduction to radiologic technology course solidifying the conjunction between the program and the office of the RSO.**

#### **Exhibits:**

- 3.1a Radiation Dosimetry Report
- 3.1b Dosimetry Badge Sign-in Sheet
- 3.1c Policy and Procedure Manual

#### **Major Strengths of Item Three:**

1. The Dosimetry Program has been in place and is currently very effective in monitoring student and instructor exposure.

#### **Major Concerns of Item Three:**

1. Placement of the control badge. This badge should be moved to a more secure area. There is no instruction for the deceptive exposure of the device.

**Item Four:**  
**Area Monitoring and Control**

## **Item Four: Curriculum and Academic Practices**

### **Summary for Item Four**

**The need for area monitoring with placards and posters will be evaluated and documented when the new equipment is installed in the proposed laboratory.**

**Instruments used to verify compliance with regulatory requirements will be calibrated at the required frequencies and will be provided by the radiation safety officer of the university.**

#### **Exhibits:**

- 4.1a Instrument list
- 4.1b Machine maintenance

#### **Major Strengths of Item Four:**

1. Until the construction of the new laboratory, there is no need for area monitoring or machine maintenance only monitoring of the control and student badges.

#### **Major Concerns of Item Four:**

1. The instruments used for surveying need to be calibrated. The list has been requested from the RSO

**Item Five:**  
**Radiological Controls**

## **Item Five: Curriculum and Academic Practices**

### **Summary for Item Five**

- **The program's current laboratory has no need for entry and exits for controlled areas, because the laboratory used on campus is not activated. The current building design has proper entrance and exits as a standard building. The present building has been used since 1975.**
- **The program does have posting for notice to employees. The radiation safety committee ensures that all areas using radiation producing sources or materials have proper postings prior to any use being carried out. This includes research and training.**
- **A current copy of Title 17 is located in the program directors office titled "Title 17 California Code of Regulations."**
- **The radiation source that was used for training purposes was not registered per the university. The program was not made aware until the site for training was decommissioned. The equipment is currently in storage awaiting installation on campus.**
- **Ancillary equipment to control or reduce exposure to radiation is on campus.**
- **Procedures for inspection will be in place when the live laboratory is constructed.**

#### **Exhibits:**

5.1a Copy of Title 17 cover sheet

#### **Major Strengths of Item Five:**

1. The program has ancillary equipment and training to reduce or control exposure to radiation in the form of lead aprons, gloves, sponges and immobilization devices such as sandbags.
2. Notice to employees is conspicuously posted.
3. Program has a copy of Title 17.
4. Guidelines for Radiation Safety Instructions is also conspicuously posted.

#### **Major Concern of Item Five:**

1. There is no "CAUTION X-RAY" sign posted.

**Item Six:**

**Emergency Exposure Situations and Radiation Accident Dosimetry**

## **Item Six: Emergency Exposure Situations and Radiation Accident Dosimetry**

### **Summary for Item Six**

**The radiation safety committee is responsible for all radiation safety incidents, accidents and security measures that require reports on all safety and bioterrorism aspects.**

**The radiography program has an accident and incident report form for use in the case of an incident or accident. If it is a radiation accident or incident the report is forwarded to the RSO. If a student receives 60 or more mrem in a reporting period:**

- **An incident report is generated.**
- **The RSO is notified immediately.**
- **Student is referred to St. Francis Medical Center for medical surveillance.**
- **Review clinical assignment for location of exposure.**
- **Reassign student or remove them from clinic.**

#### **Exhibits:**

- 1.1a Authority and Responsibilities of the University Radiation Safety Committee
- 6.1a Accident and Incident Form

#### **Major Strengths of Item Six:**

1. The radiography program is supported by the University Radiation Safety Committee and authority and responsibilities are in place.
2. The radiography program is in possession of itemize protocol for emergency exposure situations or radiation accident.

#### **Major Concern of Item Six:**

1. None





**Item Seven:**

**Record Keeping and Recording**

## **Item Seven: Record Keeping and Recording**

### **Summary for Item Seven**

**The program is currently not in compliance with Article 3.3. Records and Notification. The program was never in possession of the radiographic equipment used by the University for urgent care purposes. The urgent care was operational for less than a year. The equipment is currently in storage with the vendor. It was not known by the University that this equipment had to be registered.**

- 3. The Radiation Safety Officer (RSO) and the Program Director maintains personnel exposure records for all radiation users. The RSO maintains all records for research radiation users.**
- 4. Radiation personnel reports, for current students are kept in the clinical coordinators office until the student completes the program. Upon completion of the program dosimetry records are archived in the department indefinitely.**
- 5. It is not known by the radiography program where the RSO keeps records on research and other individuals.**

#### **Exhibits:**

- 1.1a Authority and Responsibilities of the University Radiation Safety Committee
- 3.1a Copy of dosimetry report

#### **Major Strengths of Item Seven:**

1. The radiologic technology program has a records keeping system in place as well as archiving.
2. The radiologic technology program is on a monthly dosimetry exchange program with a reputable company.
5. The program director oversees dosimetry exchange and report information distribution.
5. The RSO is carbon copied all dosimetry reports for students and faculty.

#### **Major Concern of Item Seven:**

1. The radiologic technology program does not have any information on where the RSO keeps physical records for radiation users. It has been requested.

**Item Eight:**  
**Reports to Individuals**

## **Item Eight: Reports to Individuals**

### **Summary for Item Eight**

**In accordance with 17 CCR 30255 the radiography is in compliance with training individuals in the program in regards to working in controlled areas. Individuals are also trained in the detrimental effects of radiation during their first semester and throughout the program. The program has “Notice to Employees Form RHB-2364 posted conspicuously in the laboratory. The program maintains student and faculty records indefinitely. Releasing information for archived reports only with individual’s written consent.**

#### **Exhibits:**

- 1.1a Authority and Responsibilities of the University Radiation Safety Committee
- 8.1a Form RHB-2364

#### **Major Strengths of Item Eight:**

1. The program has an excellent curriculum on radiation safety.
2. The program maintains an excellent archiving system.
3. The program makes dosimetry reports available to individuals in the program.
4. The program has RHB Form 2364 conspicuously posted.
5. The program makes available dosimetry reports upon proper request.

#### **Major Concerns of Item Eight:**

Clinical affiliates must enforce the program’s student repeat policy and the policy for direct and indirect supervision. The portable policy must also be adhered to. Memorandums and placards will be distributed to the clinical supervisors. The students will also receive memorandums

**Item Nine:**

**Training**

## **Item Nine: Training**

### **Summary for Item Nine**

#### **Operating and Safety Procedures:**

**Because Charles Drew University no longer has a live laboratory, the radiation safety procedures are limited to student training in the program. Throughout the two year program students are continuously educated on radiation hazards and safety measures. There is a radiation protection policy in the program policy and procedure manual. Ten weeks are spent educating and testing the student on patient and personnel protection in the didactic and clinical settings. Notice to employees and the guideline for radiation safety instructions are conspicuously posted throughout the radiography program department as well as at the posted dosimetry report board.**

#### **Quality Assurance Programs:**

**Quality assurance is designated in the radiation safety committee under the strategic and operating planning aspect of the safety programs currently in research. This also includes the radiography program. The committee will be totally responsible for the calibration and routine maintenance of all future functioning equipment. All members of the radiation safety committee will begin extensive training on the use of all radiation survey and personnel devices beginning in August 2010.**

#### **Regulations:**

**All regulations according to 17 CCR will be maintained.**

#### **Exhibits:**

- 3.1a Radiation Dosimetry Report
- 3.1b Dosimetry Badge Sign-in Sheet
- 3.1c Policy and Procedure Manual
- 9.1a Guideline for Radiation Safety Instructions
- 9.1b Organization Chart for Strategic and Operations Planning

#### **Major Strengths of Item Nine:**

1. There is a committee in place that is adamant about its function and its commitment to excellence. A complete review of the committee has been completed and it has embraced the radiography program as it has the research department.
2. The program has a pregnancy policy and radiation policy that is published and made known to female applicants and enrolled students that is consistent with applicable federal regulations and state laws, includes notice of voluntary disclosure, and provides

options for student continuance in the program.

3. The program and affiliates ensure that students use equipment and accessories in good condition and employ techniques and perform procedures in accordance with accepted equipment use and radiation safety practices to minimize radiation exposure to patients, selves, and others.
4. The program and affiliates ensure that medical imaging procedures are performed under the direct supervision of a qualified practitioner until the student achieves documented competency.
5. The program and affiliates ensure that radiography students repeating unsatisfactory radiographs are under the direct supervision of a qualified practitioner and that the repeated examinations are documented on the daily patient log sheet.
6. The program maintains documentation that learning environments are in compliance with RHB and federal radiation safety laws, documented by the physicist's reports at each clinical setting.
7. The program keeps records of the students' monitoring badges, and the readings are reviewed with each student on a monthly basis.
8. The program has posted conspicuously RHB Form 2364 and the guideline for radiation safety instructions in numerous place in the program department.
9. The program has a curriculum in place that meets 17 CC 30421 (b) and (c).

**Major Concerns of Item Nine:**

1. There is no general information class for the campus population, because there is no live equipment in place. The program, however, treats its current laboratory as if it were functioning by posting placards and other radiation safety guidelines.
2. The program does not have in its possession protocol for radiation contamination. This information is being forwarded by the RSO.



**Item Ten:**  
**Internal Audit Procedures**

## **Item Ten: Internal Audit Procedures**

### **Summary for Item Ten**

**The University Radiation Safety Committee has the authority by virtue of the requirements of the federal and state regulations to implement and follow the operational practices and the governance procedures for the implementation of the University Radiation Safety Program. The committee has additional authority as set forth in 10 CFR 20; Cal Admin Code, Title 17 section 30100-30380. This includes conducting periodic reviews of the safety program and inspection of the radiation laboratory facilities. Invoke corrective measures and suspend laboratory operations if corrective measures are not completed within the timeframe requested by the committee.**

#### **See Exhibits:**

- 1.1a Authority and Responsibilities of the University Radiation Safety Committee
- 1.1b Appointment Letter
- 1.1c Organization Chart

#### **Major Strengths of Item Ten:**

1. The institution has a radiation safety committee that is active and working diligently to stay in compliance with state and federal regulations.

#### **Major Concerns of Item Ten:**

1. The radiography program director was appointed to the committee June 1, 2010.