

2018-2019 Program Review Cycle



Instructional Programs

CAN Program Review (Instructional) - Radiologic Technology (Odd Year)

Program Review Narratives

2018-2019

Instructional Program Review (IPR)

Lead Contact Person: Rafael Rivera

Writing Team: Rafael Rivera

Executive Summary

0. Executive Summary: Program Strengths:

1. The curriculum is logically organized in such a way to lay a strong foundation for future courses.
2. We provide an in depth look at key aspects of radiologic technology including; communication skills, critical thinking, radiation physics, protection and effects, radiographic positioning and image creation.
3. Our curriculum provides a well-rounded clinical experience which includes pediatric, high volume outpatient clinics and general hospital. This applied knowledge allows the student to practice in any any health care setting.
4. Providing laboratory experience on campus with one non-producing x-ray unit, one portable unit and one producing x-ray unit allows students more individualized practice.
5. All courses have a critical thinking component that prepares students for their future career in radiologic technology.
6. Our graduates maintain contact with the program officials and indicate appreciation for their education and provide valuable feedback.
7. Our relationship with our clinical affiliates/partners is very strong as evident by the support they provide to our students on a daily basis. They mentor and coach Cañada College students to become well-rounded technologists; in addition, they have provided the program with equipment to en-hance student learning.

The strength of the curriculum is further demonstrated by our retention rate, the California De-partment of Public Health, Radiation Health Branch Fluoroscopy and Mammography examina-tion results and the American Registry of Radiologic Technologists national examination results. (Attached).

Program Challenges:

1. There is no level one trauma facility (major emergency center) in San Mateo County, therefore the program has no affiliation with such a facility.
2. Students have shown to have greater academic difficulty during the Spring Semester of both the first and second year.
3. The program has found the students are weak in anatomy. Prerequisite requires this class to be taken within the past 3 years. By the second year in the program, it is up to 5 years since students have completed anatomy.
4. Concern with maintaining affiliation with Kaiser Facilities due to aggressive courtship of their own Radiologic Technology Program based in Richmond. In 2014 we lost our affiliation to the out-patient Kaiser Clinic in Mountain View and Foothill College Radiologic Technology Program lost their affiliation to Kaiser Santa Clara Hospital.
5. The Advisory Committee has recommended to start teaching x-ray technique formulation during the first semester (fall). Previously we decided to start teaching technique formulation during the first spring semester because at that point in time students have a better understanding of x-ray physics.

Program Action Plans:

1. A partial solution is to incorporate simulated trauma situations in our lab experience. Last year we requested for a trauma PIXY radiographic phantom, unfortunately our request was not approved. This year we will ask for it again and hopefully it will be approved.

2. In 2015 RADT 420 and RADT 430 were changed from 2 days per week to 3 days per week. We will look at data and see if the changes were effective..
3. Comprehensive anatomy review in RADT 410 was incorporated during the fall of 2014.
4. The program has maintained positive relationship with staff and radiology management, our intent is to continue and look for ways to improve this relationship. This year the program director and clinical coordinator started to have meetings with radiology managers to establish a stronger relationship. In addition, all managers are invited to participate in our Advisory Committee; however, decisions on hospital affiliations come from upper management to whom we have no relation-ship.
5. We will start teaching basic technique formulation during the first fall semester in RADT 410 (Radiographic Positioning I).

Program Context

1. Mission: Mission statement:

The mission of the Radiologic Technology program at Cañada College is to provide a high quality vocational education to members of our diverse community who seek a career in the radiologic technology profession. The Radiologic Technology Program enables students to develop skills necessary for employment in the medical care community and provides a professional labor pool to match the needs of the community.

2. Articulation: The Radiologic Technology Program has an articulation agreement with California State University, Northridge. CSU Northridge is one of two colleges in California to offer a Bachelor's degree in Radiologic Technology; however, the other college (Loma Linda University) is private.

3. Community & Labor Needs: Community Needs: With the aging baby boomers in San Mateo County and the country as a whole, it is expected that they are going to require more medical care. There is already an increase in chronic diseases such as: heart disease, diabetes, arthritis, high blood pressure, etc. In addition, the elderly population are also prone to bone fractures caused by osteoporosis, overweight by inactivity, etc. As a result, this growing segment of the population will require more assistance and more imaging professional to diagnose and treat their medical conditions.

Employment needs: Although hospitals will remain the main employer of radiologic technologists, a number of new jobs will be in physicians' offices and in imaging centers. Employment in these healthcare settings are expected to increase because of the shift toward outpatient care whenever possible. Outpatient care is encouraged by third-party payers as a cost-saving measure and is made possible by technological advances, such as less expensive equipment, which allow for more procedures to be done outside of hospitals.

Technology: Health care and specifically imaging technologies have evolved dramatically the last few years, changing from analog film to digital systems. This evolution affects how and what we teach our students. To be able to stay current, our faculty regularly attend conferences and seminars, but more importantly most members of our faculty work in health care, where they are exposed to new technologies, new equipment and overall new trends; in addition, program officials and faculty have access to new technologies acquired by our affiliated hospitals.

Licensing and Accreditation: The program is accredited by the Joint Review Committee in Radiologic Technology (JRCERT). The program's next accreditation visit is scheduled for the first trimester of 2019 and the Interim Report is due on December 4, 2018.

The program is also licensed by the California Department of Public Health, Radiologic Health Branch (RHB) and this is a year to year licensing. The program is schedules for an RHB site inspection during the month of February, 2019. No specific date has been provided yet.

The communities of interest that advice the Radiologic Technology Program are the Clinical Instructors group and the Advisory Committee. The Clinical Instructors and program officials have a monthly meeting. This group is formed by the Clinical instructors, who are hospital employees assigned by their managers to oversee the successful training and well being of our students and program faculty. Recent meeting minute are attached. The Advisory Committee is made up by hospitals' managers, 2 students and faculty. During 2016 and 2017 the Advisory Committee was not active because of low participation. This year (2018) we reestablished it and our first meeting was on 10/25/18. Meeting minutes are attached.

Looking Back

4. Curricular Changes: No significant changes have occurred in the program's curricular offerings, scheduling or mode of delivery in the last two years.

5A. Progress Report - IPC Feedback: Recommendations will be addressed in section 7, 8A, 9A, and 9B.

5B. Progress Report - Prior Action Plans: Recommendations will be addressed in section 7, 8A, 9A, and 9B.

6A. Impact of Resource Applications: In 2016, the program was approved to purchase a new quality assurance tool (RTI Cobia Flex) and the equipment was received on January 10, 2017. Ever since we received this equipment, we have been using it in the laboratory portion of RADT 430 (Principles of Radiographic Film Production and Technique Formulation), RADT 435 (Imaging Equipment and Quality Control) and RADT 471 (Specialized Techniques: Fluoroscopy). This equipment has allowed us to measure radiation dose, energy, exposure time, filtration, monitor contrast and brightness, and radiation dose rate. When it comes to student learning, this equipment has allowed us to complete lab experiments that in the past were impossible to do, the effect of completing this lab has been a better understanding of the materials covered in both lab and lecture and a better flow of the material being taught. At this point in time we do not have any statistics to show us if there has been a change in students grades when compared to the previous classes when the RTI Cobia Flex was not available. The program will work on obtaining

the statistics for future program reviews.

6B. Impact of Staffing Changes: A clerical position was approved in 2016 and it has been of immense help to the program. We have been able to stay on top of all the clerical needs: clinical sites on-boarding documents, students' clinical hours, clinical instructors' meeting notes, providing information to prospective students, organizing students' clinical files, etc. The person who was first hired transferred to another department in early 2017. Eventually, the position was filled in the summer of 2017.

Current State of the Program

7. Enrollment Trends: Enrollment and Load. The enrollment and load have been consistent for the past fifteen years. The enrollment is limited by the number of clinical training sites available for students and the job market for graduates of the program. The success and retention is quite high. There is considerable competition to get into the program with 100 - 130 applications each year for the 20 spots in the class. This allows the program to select students most likely to be successful. In addition, the students move through the program as a cohort, which also improves retention and success. In addition, the scheduling of didactic classes is restricted in some degree by the number of available hours when students are on campus and not in the hospital.

Marketing. The program works closely with college ambassadors to promote the program within the local high schools by doing presentations at the college or at the high schools. Furthermore, the program has developed a good reputation and is able to attract applicants from our local community and also from locations such as San Francisco, Oakland, Hayward, Fremont and as far as Santa Cruz.

Articulation. The program has an articulation agreement with California State University, Northridge, which is the only public university in the state to offer a Bachelors' Degree in Radiologic Technology.

One possible solution to increase load would be to increase the number of continuing education courses we offer. We already offer mammography as a continuing education course. With the addition of the new x-ray classroom/ lab that is being built in building 23, a fluoroscopy machine will be added to the other radiographic equipment. This addition will give us the opportunity to develop new continuing education courses in fluoroscopy for x-ray technologists and physician assistants.

In reviewing the Productivity Data Package the majority of our courses look to be very productive; however, the maximum enrollment is not reflecting the correct enrollment of students. As stated previously the program is limited to accepting a maximum of 20 students per cohort and in some cases we can only accept 19 students. This maximum enrollment is determined by the number of spaces available at each clinical facility; therefore, the maximum enrollment should be set at 20 students.

8-A. Access & Completion: Students are accepted into the Radiologic Technology Program through a "paper only" application process. The number of affiliated clinical sites (hospitals) and the number of students each clinical site can take at any given time determines the number of students accepted into the program. From the paper only application, only age can be identified from official transcripts that must be reviewed for prerequisites. Students are not identified by ethnicity during the course of the program.

1. Historically we have had a very low number of African American and Pacific Islander applying to the program. It is possible that we need to do more outreach in these populations. We will work closely with the Cañada College Outreach Program to promote the Radiologic Technology Program in high schools and communities where there is a higher incidence of these populations; in addition, we will bring promotional materials to affiliate hospitals where patients and family members can have access to them.

2. It appears there is no difference between gender's success and retention rate over a five-year period. This is not an area that needs to be addressed

3. Success rate and retention rate is at 87.50% for the last 5 years. The program typically accepts 20 students per year and we lose one or two students. For those that complete that program, 100% of them have passed the national examination on the first trial (last 18 years) and the job placement rate at one year after graduation is at 94.20% five year average. (see attachment)

4. The Radiologic Technology curriculum is offered during the daytime only. The evening course RADT 470: Mammography is not required for the radiologic technology program and is open to all licensed technologists.

In reviewing the Equity Supplement Gap Analysis, we have observed that the access rate for male students has an equity gap of -6.1%. As stated previously the program has an application process where the most qualified applicants are accepted. The application process only allows us to identify the age of the applicant. However, when observing the population of X-ray Technologist in California there is probably a bigger gap between male and female technologists. Traditionally and like many allied health careers this field has been a female dominated. According to the American Registry of Radiologic Technologists (ARRT) the gender breakdown nationwide is 72% female and 28% male. In California specifically the breakdown is 53.6% female and 46.4% male (see attachment).

It was also observed that there is an equity gap of -6.1% for Hispanics and a -3.4% for Asians in comparison to the overall school percentages. The program will address this issue by working closely with the outreach program and also by reaching out to local high schools and to our own English Institute.

Please note that many of our students come from counties outside of San Mateo County, with many of them moving from places as far as Redding, Sacramento, Stockton, and Southern California and so the demographics of the program do not necessarily represent the demographics of the Cañada College.

8-B. Completion - Success Online: Currently the Radiologic Technology Program does not offer any online courses.

9A. SLO Assessment - Compliance: The Radiologic Technology Program is a Career and Technical Education program and all courses must be updated every two years. The great majority of SLO's are assessed every year and they are part of the Program Assessment Plan (see attachment). Some SLO's are assessed by the program director and clinical coordinator and others are assessed by the instructor teaching a particular course. SLO's are assessed by comparing outcome results with benchmarks established by program officials.

We are in the process of assessing all SLO's in Tracdat and they will be ready in the next few weeks.

9B. SLO Assessment - Impact: On our last program report we reported that starting in the spring of 2015 the didactic hours in Radiographic Positioning II (RADT 420) and Principles of Radiation Exposure (RADT 430) have been rearranged. These courses were offered on a Monday and Wednesday (2 hours 10 minutes lectures) and because of the difficulties students had shown during the first spring semester, program officials decided to rearranged class schedules to Monday, Wednesday and Friday (1 hour 20 minutes lectures). We have been following changes and trends and we have seen an improvement in student attrition. The first spring semester used to be the semester were we observed the highest number of student failing (one or two students) and then dropping the program. Now that number is either one or zero student failing.

The program is in the process of completing a Self Study Report for the JRCERT (Joint Review Committee on Education in Radiologic Technology) due on 4, 2018 and all SLO's are reviewed and Assessed, this document will be shared with school's officials. In addition, we are in the process of assessing all SLO's in TracDat and they should be ready for review in the next few weeks.

10. PLO Assessment: PLOs are assessed every year in accordance with JRCERT requirements, please see attached Assessment Plan 2016 - 2017.

The assessment plan for Program Student Learning Outcomes (PLOs) measures Program quality through the assessment of benchmarks set by the Program and Advisory Committee. The measurement of assessments indicate three possibilities: 1) positive results encourages us to continue utilizing current methodology, 2) negative results require review of curriculum, curriculum delivery, application of measuring tool, and then we look for possible solutions; and 3) results that are difficult or impossible to measure are revised, replaced or removed.

The program assessment plan gave us a good overview of programs success; for example, PLO #5, the program will graduate entry level technologists, shows us that 100% of students are passing the ARRT national board examination on their first trial, the students job placement 12 months after graduation in a 5 year average is at a 94.2%. In addition, the programs passing rate in comparison to the national average has been approximately 11% higher.

In summary assessment's results of PLOs are good in demonstrating strengths and weaknesses of the program.

Other data that reveals Program performance are:

1. The State of California Department of Public Health Radiologic Health Branch (RHB) Radiography examination success rate of 100%.

<https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/RHB/Schools/X-raySchoolPassRates.pdf>

2. The Program Effectiveness Data found in the program's website.

https://canadacollege.edu/radtech/images/Program_Effectiveness_Data_2017.pdf

3. The American Registry of Radiologic Technologists

National Comparison Report. Attached

Looking Ahead

11. Program Planning: Objective #1: To find ways to support students who are in danger of performing at or below "C" level (75%).

Our plan is to have students who are struggling in their clinical or didactic courses, to be part of the tutoring sessions that have been arranged twice per week. Students who are having difficulties in the clinical setting will be required to meet with the Clinical Coordinator one a week to verify progress. Those struggling in didactic courses will also meet with the Program Director once a week to figure out strategies and to verify if these strategies are effective.

Objective #2: Maximize use of new equipment.

Program faculty will work on developing new courses in fluoroscopy designed to prepare x-ray technologist and physician assistants to sit for the state examination.

Objective #3: Reach out to groups who are underrepresented in the Radiologic Technology Program.

Program officials will seek the help and advice of the Cañada College Outreach Program, to find different ways to reach out to the underrepresented communities.

The program holds two information meetings per year. We will like to hold one of these information meetings at the Cañada Menlo Park Site which is closer to East Palo Alto, Belle Haven, and North Fair Oaks.

Objective: Support, Educational Offerings and Diversity

Objective #1: To find ways to support students who are in danger of performing at or below "C" level (75%).

Our plan is to have students who are struggling in their clinical or didactic courses, to be part of the tutoring sessions that have been arranged twice per week. Students who are having difficulties in the clinical setting will be required to meet with the Clinical Coordinator one a week to verify progress. Those struggling in didactic courses will also meet with the Program Director once a week to figure out strategies and to verify if these strategies are effective.

Objective #2: Maximize use of new equipment.

Program faculty will work on developing new courses in fluoroscopy designed to prepare x-ray technologist and physician assistants to sit for the state examination.

Objective #3: Reach out to groups who are underrepresented in the Radiologic Technology Program.

Program officials will seek the help and advice of the Cañada College Outreach Program, to find different ways to reach out to the underrepresented communities.

The program holds two information meetings per year. We will like to hold one of these information meetings at the Cañada Menlo Park Site which is closer to East Palo Alto, Belle Haven, and North Fair Oaks.

Objective Status: 1 - New (PR)

Objective Year: 2019-2020

Estimated Start Date: 01/14/2019

Estimated Completion Date: 01/14/2020

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success