College of Southern Idaho Radiologic Technology Program Outcome Assessment for the Class of 2023

Mission: To prepare students to become graduates for entry-level employment as ARRT Registered Technologists in Radiography

Category I: Graduate Performance
Goal I: Program effectiveness will be measured on an ongoing basis

Outcome	Tool	Benchmark	Time Frame	Responsibility	Result
1. Enrolled students will complete the program.	CSI Institutional Research Graduation Report	≥ 80 % annual graduation rate.	Commencement (May)	Program Director	**Yes** 12/12 = 100%

Action: Track data and compare trends.
1. Completion rates for the program during the past 5 years is trending ≥ 90% as follows: 2023 = 100%, 2022 = 100%, 2021 = 100%, 2020 = 91.6%, 2019 = 91.6%.
2. The program's 5-year average completion rate is 96.6% resulting in an attrition of 3.4%, which is very low. Instruction for the Class of 2023 was returned to face-to-face teaching at the beginning of their training in August 2021. This was sometimes problematic due to COVID and other illnesses being passed amongst students causing the highest absentee rate ever recorded in the program. Most courses in the winter months were also available through Zoom because so many students were absent. The program made exceptions to attendance requirements to ensure all students could remain in training.

| 2. Graduates will pass the ARRT exam in radiography on the first attempt. | A. Annual first-time pass rate. | A. ≥ 80 % Annual first time pass rate. | A. January 1 to December 31 for graduating class. | A. Program Director. | A. **No** 8/12 = 67% |

Action: Track and compare trends.

1. The Class of 2023's first-time credentialing examination pass rate was 67%. Less than the benchmark of 80% set by the JRCERT and the program.

2. The Class of 2023's first-time credentialing examination pass rate of 67% is significantly lower than the Class of 2022's (91.6%), 2021 (100%), 2020 (90.9), 2019 (90.9).

3. The average annual first-time pass rate for Idaho was 92.4% for 2022 (latest data available from ARRT) and 88.4 for 2021.

4. The national average first-time pass rate is 83.5% (2022), 83.8% (2021)

5. The Class of 2023 had 4 failures. Failing scaled scores were 71, 70, 70, and 69. The program administers four mock registry exams in the final semester of training for students. The final mock given in April usually is a highly reliable predictor of a student's success on the actual ARRT Registry exam. For this cohort the four failing students scored between 83 – 88 points on the final mock exam of the semester. The results were not predictive of the actual ARRT Registry scores. Two questions arise. Did students get access to the exams prior to taking them or has the reliability and validity of the exams changed?

Table 1   4th Mock   Exam D 2023   04.21.23   Students who failed the Registry

	Pre-Test Scaled Score	Post Test Scaled Score	Exam A Scaled Score	Exam B Scaled Score	Exam C Scaled Score	Exam D Scaled Score	ARRT Prediction	A. Anatomy	B. Equip	C. Image Production	D. Patient Care	E. Radiation Protection	F. Radio Graphic Procedures	Ave. scaled Score of Final 4 mocks
Student 1	51	59	69	94	90	83	93	78.3	87.5	79.41	**51.5**	90.57	85.37	84
Student 2	61	68	62	64	71	83	93	**69.6**	81.3	76.47	90.9	83.02	73.17	70
Student 3	57	68	54	80	83	88	98	100	**62.5**	73.53	100	77.36	90.24	76.25
Student 4	61	67	68	73	83	86	96	78.3	81.3	85.29	87.9	**77.4**	87.8	77.5

6. The highest section score for the Class of 2023 was Equipment Operation and Quality Assurance (8.3). The previous three years this section was either the 4th or the 5th highest score 2022 (8.2), 2021 (8.2), 2020 (8.4). This section had the lowest national ARRT mean candidate score of 7.9 for 2022. Students' learning held steady in these topics but dropped considerably in Thorax and Abdomen Procedures, 2023 (7.3), 2022 (8.2), 2021 (7.8), 2020 (8.5) as well as Extremity Procedures, 2023 (7.9), 2022 (8.8), 2021 (8.2), 2020 (8.4). The 2nd highest section scores for the Class of 2023 were Image Acquisition and Evaluation (8.1) and Radiation Protection (8.1). These sections were the 4th – 6th in the previous three years. The program was in transition when the Class of 2023 began their training with the retirement of Gary Lauer and new faculty joining the program later in the fall of 2021. The section scores of the courses taught by the new faculty member dropped over previous years. The combination of a new faculty member and excessive student absences due to illness and a lack of dedication to the program had a significant impact on student's learning and consequently their Registry pass rate.

7. Of the four students who failed the Registry in 2023, three were single mothers, one had several family emergencies and personal illnesses, all had excessive absences. All were predicted to pass the Registry on their final Mock Registry Exam in April 2023. These students had many additional obligations that most students do not encounter. Students are made aware of resources that may help them navigate their personal struggles, e.g. childcare scholarships, online

COLLEGE OF SOUTHERN IDAHO

resources, and instructor help. The program is considering using another testing company for the mock examinations students take during their final semester of training. One consideration is the Ketterling exams. They are expensive but have good reviews. The pass rate for the Class of 2024 will be evaluated to see if changes are necessary. The last time there were 4 failures on the Registry was in 2013. 2023 may have been a one-off that occurs periodically.

Table 2				Section Scores on Registry						
Class of	1. Patient Interactions & Management	2. Radiation Physics & Radiobiology	3.Radiation Protection	4. Image Acquisition & Evaluation	5. Equipment Operation & Quality Assurance	6. Head, Spine & Pelvis Procedures	7. Thorax & Abdomen Procedures	8. Extremity Procedures	Scaled Score	1st Time Pass Rate
2023	7.6 – T + D	8.0 - T	8.1 - T	8.1 - T	**8.3 - T**	7.5 – D + E	**7.3 - D**	7.9 - D	78	67%
2022	8.7 – T	8.3 G + T	8.4 - T	8.2 - T	8.2 - G	**7.5 - T**	8.2 - T	**8.8 - T**	83	92%
2021	**8.9 - T**	8.7 – G + T	8.6 - T	8.0 - G	8.2 - G	8.3 –G + T	**7.8 - T**	8.2 -T	84	100%
2020	8.6 - T	**8.8 – G + T**	8.6 - T	8.4 - G	8.4 - G	**8.1 – G + T**	8.5 - T	8.4 - T	85	91%
2019	8.0 - T	8.6 –G + T	**8.7 - T**	8.3 - G	8.2 - G	8.1 - G + T	**7.8 - T**	8.1 - T	82	91%
				B. 5-year first time pass rate.	B. ≥ 80 % 5-year first time pass rate.	B. January 1 to December 31 for graduating class.	B. Program Director.			B. **Yes** 51/58 = 88%

Action: Track and compare trends.
1. The program's 5-year (2023 – 2019) average first time credentialing pass rate is 88% (2023 = 8/12, 2022 = 11/12, 2021 = 12/12, 2020 = 10/11, 2019 = 10/11, = 51/58 = 88%).
2. **ARRT's Average Annual Report of Examinations 5 year pass rate for 2022** is 86.8% down from 87.9% in 2021 and 88.6% in 2020 (annual rate for 2022 = 83.5%, 2021 = 83.8%, 2020 = 88.2%, 2019 =89%, 2018 = 89.4%), compared to CSI's 5-year pass rate of 88%. The decline in the national average score is not surprising since this outcome spanned the COVID pandemic.
3. CSI's 5-year first time pass rate is 1.4 points above the national average.
4. The program has 7 first-time credentialing failures in the past five years. The student who failed in 2019 passed approximately one year later. The student who failed in 2020 has not passed the examination yet. The student who failed in 2022 passed within a couple of weeks. Out of the four who failed in 2023, only one has passed at the time of this report. The program director has reached out to these students to see if they wanted help remediating but all declined.

			C. Annual program mean scaled	C. ≥ 80 Annual program mean	C. January 1 to December 31 for	C. Program Director.			C. **No** 8/12 passed

		score.	scaled score.	graduating class.		78% mean scaled score

Action: Track and compare trends.
1. The annual program mean scaled score for 2023 is 78%, 3 points above the ARRT's minimum passing scaled score of 75 and 2 points below the program benchmark.
2. Four students had a scaled score that did not meet the ARRT passing score of 75% (71, 70, 70, 69). Four students scored a high of 86%.
2. The Class of 2023's annual standard scaled score of 78 is 4.4 points below the 2022 national average of 82.4 as reported in **ARRT's Annual Report of Examinations: Primary Eligibility Pathway 2022** (latest data available).
3. 2023's annual scaled score of 78% was 5.8 points below the 2022 Idaho mean scale score of 83.8 as reported by ARRT. The state mean scaled score dropped from 85.8 (2020) to 84.4 (2021), 83.8 (2022) a drop of 2 points since the COVID pandemic began.
4. The Class of 2023's, mean scaled score of 78 is 5 points lower than the Class of 2022 (83), 5.9 points lower than 2021 (83.9), 6.9 points lower than the Class of 2020 (84.9), 4.5 points lower than the Class of 2019 (82.5). This drop in mean scaled score from last year may be due to the interruption in didactic training due to new faculty along with excessive absences.
5. There were 16 fewer Idaho graduates who took the ARRT certification examination in Radiography in 2022 than 2021 but the average mean scaled score increased by .6 points. The percentage of Idaho students who passed the ARRT certification examination on the first attempt increased to 92.4% for 2022 graduates compared to 88.4% in 2021. Fewer students taking the Registry may be due to weaker students dropping out during the pandemic hence increasing the mean scaled score for the state.
6. Students seem to be struggling more trying to balance study, work, and family life than in years past. The Class of 2023 just wanted to pass the Registry and didn't care what score they got.

		D. 5-year program mean scale score.	D. ≥ 80 % 5-year program mean scaled score.	D. January 1 to December 31 for graduating class.	D. Program Director.	D. **Yes** 82.6%

Action: Track and compare trends.
1. CSI Rad Tech Program's 5 year program mean scaled score of 82.6% (2023 = 78%, 2022 = 83%, 2021 = 84%, 2020 = 85%, 2019 = 83%, = 413 ÷ 5 = 82.6%) is .4 points lower than ARRT's 5 year national mean scale score of 83% (2022 = 82.4%, 2021 = 82.3%, 2020 = 83.3%, 2019 = 83.4%, 2018 = 83.6%, = 415 ÷ 5 = 83.2%) as calculated from **ARRT's Annual Report of Examinations** (2022 – 2018).
2. The five-year program mean scale score is 2.3 points lower than last year's five-year mean scale score of 84.9. The score has trended downward the past four years but still is above the ≥ 80% program benchmark.
3. ARRT's 5-year national mean scale score has also trended down the past five years by 1.3 points.

3. Graduates will be employed within 6 months of graduation.	CSI RT Program Graduate Survey question # 4: students self-reporting job status.	≥ 80 % of those seeking employment of those surveys returned. (Excludes military and continuing	Last day of class during the final spring semester of training. (Note: Students who are not employed as of last day of class	Program Director	**Yes** 12/12 = 100%

	education.)	are contacted within 6 months of graduation.)			

Action: Track and compare trends.

1. The 5-year average annual job placement rate (2019 – 2023) for students reporting job status has been 100%. (2023 12/12 = 100%, 2022 11/11 = 100%, 2021 12/12 = 100%, 2020 11/11 = 100%, 2019 10/10 = 100%, 500% ÷ 5 = 56/56 = 100%.

2. 12 of the 12 students from the Class of 2023 had jobs at graduation. Nine stayed within the Magic and Wood River Valleys, three left the area for other career opportunities.

4. Graduates will receive a quality education.	CSI RT Program Graduate Survey question # 1: Did the CSI Radiologic Technology Program adequately prepare you for entry-level employment as an ARRT Registered Technologist in Radiography? (Note: Answers to this question are anonymous.)	≥ 80% students answer YES of those who returned surveys and answered the question.	Last day of class during final spring semester.	Program Director	**Yes** 83.3% = 10/12 replied yes 8.3% = 1/12 replied No 1 student did not answer the question

Action: Track and compare trends.

1. 10 of the 12 students in the cohort surveyed answered "yes" to the question. One student answered "no", and one student did not answer the question. This was a significant improvement from the previous year.

2. The program was suffering from some instability during this training period due to first, a lack of faculty then new faculty.

3. Some of the comments from students on the form are:

    I feel like chemistry should be required.

    No so much busy work.

    Make students actually follow the rules and show up to classes/clinicals. Not letting students cheat hours.

    Have a minimum comp you have to get but not a max each semester.

    Keep working hard.

    The program is great.

4. Throughout the years, the overwhelming majority of CSI Rad Tech Program graduates indicate the CSI Rad Tech Program adequately prepared them for

entry-level employment as ARRT Registered Technologists in Radiography, which aligns with our program mission statement.					
5. Employers will be satisfied with the (hard – technical) performance of graduates.	Employer Survey Question #1: Graduate employee(s) exhibit clinical competency commensurate of an entry-level technologist.	≥ 95 % Agree or Strongly Agree Combined satisfactory rating of those surveys returned.	Six months post -graduation.	Program Director	**Yes** 3/3 surveys returned

Action: Track and compare trends.

1. 3/3 surveys returned rated the Class of 2023 graduates as 5 (strongly agree).

2. The composite score for the Class of 2023 (5) is higher than the Class of 2022 (4.7) and the Class of 2021 (4.72).

3. Surveys returned from the past six years show employers were satisfied with the technical skills of graduates they employed (2022 = 12/14 = 86%, 2021 11/11 = 100%, 2020 = no data, 2019 = 6/6 = 100%, 2018 = no data, 2017 = 2/2 = 100%, 2016 = 5/5 = 100%).

4. The return on surveys was down this year. We received feedback on only 3 graduates compared to all 12 graduates from the Class of 2022, 11 graduates from the Class of 2021, and 6 graduates from the Class of 2020. We will continue to email the surveys directly to department managers as this method seemed to work better than using Survey Monkey.

5. All respondents indicated they would hire CSI graduates again.

6. Starting with the Class of 2023 the 2022 ARRT Didactic and Clinical Competency 10 patient care skills are being evaluated. These skills are initially learned in either the CNA or EMT course, confirmed by their CNA or EMT written and skills exams to become licensed, then reinforced during the Orientation to Radiologic Technology and Procedures I and II courses before being comped at St. Luke's Magic Valley with the radiology nurses.

		5	4	3	2	1	
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1.	Graduate employee(s) exhibit clinical competency commensurate of an entry-level technologist	5					15/3 = 5

Category II: Clinical Performance.
Goal II: Students will be clinically competent.

Outcome	Tool	Benchmark	Time Frame	Responsibility	Result
1. Students will demonstrate they have the clinical skills of a radiographer.	A. All competency exams. (Direct)	A. 95% of the total comps will be passed on the	A. 3rd, 4th, and 5th semesters.	A. Clinical Coordinator	A. **Yes** 682/684 = 99%

		first attempt.			

Action: Track and compare trends.
1. 99% of all competencies were completed satisfactorily on the first attempt. The Program Director did some remedial training during the 1st CE semester on exams students identified as their weakness. This helped students gain confidence. Students were encouraged not to rush into their comps but to practice in an assist or solo role multiple times before comping, so they were thoroughly prepared to perform the exam with 100% accuracy.
2. The Class of 2023 reported 2 unsatisfactory comps: 1 in the first CE semester, and 1 in the final CE semester.
3. The Class of 2022 reported 9 unsatisfactory comps.
4. The Class of 2021 reported 13 unsatisfactory comps.
5. The Class of 2020 reported 6 Unsatisfactory Comps.
6. The Class of 2019 reported 7 Unsatisfactory comps.
7. Only 2 unsatisfactory comps seems low for the Class of 2023 but the chain of possession for the unsatisfactory comps is well known by clinical preceptors so we are confident the number is correct.

	B. All venipuncture lab competency evaluations. (Direct)	B. 100% of students will pass their venipuncture lab competency evaluation.	B. 5th semester	B. RADT 165 Instructor	B. **Yes** 12/12 = 100%

Action: Track and compare trends.
1. All students from the Class of 2023 passed their venipuncture lab competency evaluation with 100% accuracy. Students from the Class of 2022, 2021 and 2020 also passed with 100% accuracy.
2. Two new IV arms were purchased for use in the CT course for the Class of 2023.
3. After the JRCERT site visit in September 2022 it was determined students could no longer perform IV starts on patients in clinical education. Some facilities do not allow students to start IVs therefore it is not equitable to allow some students to practice IV starts while others did not have the opportunity.
Note: Students enter RADT 165 Fundamentals of Computed Tomography after taking an extensive online venipuncture course that meets California's strict venipuncture standards and that results in a certificate of completion. We retain copies of the certificates as verification that all students have completed this online course successfully prior to entering RADT 165.

	C. Trauma Case Study Part 2: #1 How well do you feel your clinical experience has prepared you for trauma radiography?	C. 100 % of students will score ≥ 3.	C. 5th semester	C. Clinical Coordinator	C. **Yes** 12/12 ≥ 3

	(Indirect)				

Action: Track and compare trends.
1. All 12 students reported a score of 3 (Prepared) on a scale of 1 Poorly prepared to 4 Highly prepared with an average score of 3.
2. All students believe their expertise in trauma radiography would be enhanced with more trauma experience. A rural environment limits the number of exams available to students.
3. Students are given the opportunity to do an evening CE rotation at their clinical site with clinical preceptor and clinical coordinator approval during high trauma probability periods (evenings) to enhance their trauma experience. Not all students take advantage of this opportunity.
4. Students complete Bontrager's Unit 15: Trauma, Mobile, and Surgical Radiography in RADT 162 during the 4th semester of training. During RADT 151 (1st Spring) and RADT 162 (2nd Fall) instructors reinforce basic trauma, mobile, and surgical positioning concepts while teaching routine entry-level radiographic procedures.
5. The CE trauma rotation at Intermountain Medical Center (IMC) in Murray, Utah was approved through the JRCERT. Five students from the Class of 2024 have elected to participate in the trauma rotation there in March and April 2024. IMC is a trauma 1 hospital with countless opportunities to perform trauma imaging. Students will be placed in the Emergency Department for an entire week to work alongside R.T.'s as they image trauma patients. The program will compare students' perception of trauma preparedness after the IMC rotations in 2024.

2. Students will demonstrate they have the employability skills of a radiographer.	A. All Grade Determination Form B's composite score. (Direct)	A. 100 % of students will score ≥ 3 by the end of the 5th semester.	A. 3rd and 5th semesters.	A. Clinical Coordinator	A. **NO** 11/12 = 92% 3.69 average

Action: Track and compare trends.
1. The 3rd and 5th semester combined average scores on Form B were 3.6 in RADT 180 and 3.77 in RADT 182 with an average of 3.69. Significantly higher than the benchmark of ≥ 3.
2. Ten of the twelve students showed growth over their clinical experience, one student showed a slight decrease but was still above the benchmark of 3 in RADT 182. One student showed a significant decrease in RADT 182 decreasing to a score of 2.71 for RADT 182 compared to 3.35 in RADT 180. This student seemed to have lost their initiative to perform competently in CE, did not take constructive criticism well, did not communicate effectively with clinical staff, and was suspected of falsifying their clinical hours.
3. The average score of 3.69 was lower than the Class of 2022 (3.76), Class of 2021 (3.72) and Class of 2020 (3.76).
4. Students seem to be burning out during their final (5th) semester of training more so than in the past. Keeping them motivated to perform at a high level not just completing their outcomes has become a struggle. Beginning with the Class of 2024 students will have to show continued competence on 5 exams at the end of their training (chest, abdomen, upper extremity, lower extremity, and hip or shoulder). These exams will require the student to set a manual exposure technique. The new continued competencies should help to keep students engaged.
NOTE: Form B has been completely revamped for the Class of 2024 into an objective rubric so grades will be more consistent between facilities. The new form encourages relevant feedback from the clinical preceptors to help students develop their skills.

	B. Anonymous	B. 100 % of	B. 3rd, 4th, 5th	B. Program	B. **NO**

	Student Clinical Education Self-Assessment Survey. (Indirect)	students will score ≥ 3 by the end of their 5th semester.	semesters. .	Director	3rd semester – 2.94 6/12 ≥ 3 4th semester 3.22 10/12 ≥ 3 5th semester 3.37 10/11 ≥ 3

Action: Track and compare trends.

1. Students showed growth throughout their CE training with 6/12 scoring ≥ 3 in RADT 180, 10/12 scoring ≥ 3 in RADT 181, and 10/11 scoring ≥ 3 in RADT 182. One student did not turn in the survey for RADT 182.

2. The lowest score in RADT 180 and 181 was 1.7. The lowest score in RADT 182 increased to 2.42.

3. Students who scored themselves lower in RADT 180 lacked confidence in invasive procedures, ED procedures, surgical procedures, and portable exams. These students may have been in a rotation where these exams were not readily available for them to get experience doing the procedures. Confidence increased in RADT 181 with only invasive procedures and surgical procedures scoring low. The lowest scoring survey in RADT 182 showed one student still was not highly confident in invasive procedures, ED procedures, surgical procedures, and pediatric procedures but the lowest marks had increased over the previous two semesters.

4. The average 5th semester score for the Class of 2023 (3.37) was lower than the Class of 2022 (3.55) and the Class of 2021 (3.5).

4. Some students are reluctant to ask for help when they are struggling. Clinical Preceptors are good at identifying students who need extra help. When a student scores a "2" or lower on Form B the student and Clinical Coordinator develop a plan of action to improve their skills.

5. Specialized labs in invasive and emergency procedures will be considered if students want to attend outside of current class time. An adjunct instructor will need to be hired if the program increases the number of students and could help with the labs.

6. It is now mandatory that students complete at least one evening shift in RADT 181 to expose students to more trauma imaging. We will make it mandatory in RADT 182 starting with the Class of 2025.

7. The trauma rotation at Intermountain Medical Center will begin in March 2024. Five students have elected to participate in the voluntary rotation. Students are responsible for their travel expenses while in SLC for the rotation that limits some students from participating. As the new Rad Tech Endowment Scholarship grows some of the funds could be used to help students with expenses during this rotation. At this point, rotations are limited at IMC but we may be able to get additional slots if we have more student interest. It will be interesting to see how students' experiences at IMC reflect on their personal growth in trauma imaging.

8. We are looking for a pediatric rotation at either St. Luke's Childrens Hospital or Primary Childrens Hospital to give students more pediatric imaging experience.

9. The data will continue to be tracked and compared to previous cohorts to see how the additional specialized imaging rotations helps students build confidence.

Category III: Problem Solving and Critical Thinking
Goal III: Students will possess problem solving and critical thinking skills.

Outcome	Tool	Benchmark	Time Frame	Responsibility	Result
1. Students will demonstrate critical problem-solving skills	A.	A.	A.	A.	A.

performing a variety of challenging radiography procedures.	Grade Determination Form B # 3: The student thinks and acts creatively.	100 % of students will score ≥ 3 by the end of the 5th semester.	3rd and 5th semesters.	Clinical Coordinator	**Yes** 12/12 ≥ 3 3rd semester 3.4 5th semester 3.7

Action: Track and compare trends.

1. Comparing 3rd and 5th semester combined average scores were 3.4 and 3.7 respectively suggesting critical problem-solving skills grew during student's training.

2. Comparing the Class of 2023's combined average score of 3.4 and 3.7 shows an increase over the Class of 2022's scores of 3.3 and 3.6, the Class of 2021's score of 3.2 and 3.5, while 2020's 3rd and 5th semester combined average scores of 3.9 and 3.7 is higher or equal to the Class of 2023.

3. Grade Determination Form B was revised for the Class of 2024. The tool now states Application of Knowledge/ Retention & Problem-Solving Skills/Critical Thinking. Form B is now structured like a rubric giving clinical preceptors more specific examples of expectations for grading students.

4. The data will be tracked to see if the program receives more useful information on the new Form B.

	B. CSI RT Program Evaluation of Clinical Site # 1 (Gave student opportunities to participate in various radiographic procedures) and # 24 (An adequate number of procedures).	B-1. 100 % of students will score ≥ 3. B-2. 100 % of students will score ≥ 3.	B-1. 3rd and 5th semesters. B-2. 3rd and 5th semesters.	B-1. Clinical Coordinator B-2. Clinical Coordinator	B-1. **Yes** 4.87 B-2 **Yes** 4.82

Key	B-1 #1: Opportunities to Participate					B-2 #24: Adequate Number of Procedures				
	5 Very Strongly	4 Strongly Agree	3 Agree	2 Disagree	1 Strongly Disagree	5 Very Strongly	4 Strongly Agree	3 Agree	2 Disagree	1 Strongly Disagree

	#4 Image Analysis (Direct)				

Action: Track and compare trends.

1. The Likert scale for this outcome has been changed from 1 – unacceptable to 4 –exceeds expectations to 1 – highly unacceptable to 10 – excellent to better document students' performance in the oral assessment.

2. The Class of 2023 had two students who did not meet the benchmark of ≥ 7.5 for the exam. Their scores were 6 and 7. The Classes of 2022 and 2021 were not assessed through an oral lab assessment because of the COVID pandemic. The Class of 2020 exceeded the composite benchmark of ≥ 3 with a score of 3.6; the Class of 2019 did not meet the benchmark with a score of 2.3.

3. Because image analysis has been identified as a program weakness, beginning with the Class of 2024 students now use the textbook Radiographic Image Analysis 5th ed. along with the associated workbook in the course for more instruction on evaluating their images. The course is only 1 credit (50 minutes) limiting the amount of face-to-face instruction time available.

4. The Class of 2025 will have an image analysis lab during RADT 180 in the summer to strengthen their image analysis skills.

NOTE: The Image Analysis course is only one credit taught in the 2nd semester of training in conjunction with RADT 151 Radiographic Procedures 1. Students are required to spend a significant amount of time on their own to master the concepts.

4. Trends will be compared between the Classes of 2023, 2024 and 2025 to see if the updated course content affects students' performance in image analysis.

	B. Anonymous Student Image Analysis Self-Assessment Survey, #1-5. (Indirect)	B. 100 % of students will score ≥ 3 by the end of the 5th semester of training	B. 3rd and 5th semester.	B. Clinical Coordinator	B. **No** 11 out of 12 students scored ≥ 3 with a composite score of 3.7 in RADT 182 1 student scored themselves a 2.6 in RADT 182

Action: Track and compare trends.

1. The Class of 2023 did not meet the benchmark of ≥ 3 because one student scored themselves a 2.6 in the 5th semester. Two students scored less than 3 in the 3rd semester. The composite score for the cohort increased from 3.2 in the 3rd semester to 3.7 in the 5th semester.

The Class of 2023's score of 3.7 is slightly lower than the Class of 2022's score of 3.8. The Class of 2021's average score was 3.7, the Class of 2020's score 3.2 and the Class of 2019's score 3.6.

2. The student with an average score of 2.6 in the 5th semester scored themselves with a "2" on question #3 "How confident do you feel is assessing patient alignment to the image receptor on a radiograph" and on question #4 "How confident do you feel in in correcting exposure techniques based on the deviation index (DI)?" The anonymous survey was given at the end of training in the 3rd and 5th semesters.

NOTE: in reference to correcting exposure techniques, students are often intimidated by staff R.T.s and do not feel comfortable changing exposure technique, consequently, do not learn how to manipulate kVp and mAs through testing their own techniques based on theory. Students do not see adherence to a standard for meeting the target exposure index (TEI) or deviation index (DI) in the clinical facilities so do not feel it is important, therefore do not put in the time to build expertise in exposure technique. This has been an ongoing problem.

4. With the incorporation of the new textbook Radiographic Image Analysis 5th ed., we are optimistic students will have a better understanding of image analysis with the Class of 2024.

5. Overall students feel confident in their image analysis ability based on the data from the anonymous Image Analysis Self-Assessment Survey.

Category IV: Communication Skills
Goal IV: Students will communicate and interact effectively with patients and staff.

Outcomes	Tools	Benchmark	Time Frame	Responsibility	Result
1. Students will provide appropriate patient instructions that prevent repeats prior to making an x-ray exposure.	A. All Unsatisfactory Competency Evaluation Task # 14: Patient Instructions. (Direct)	A. ≥ 95% combined satisfactory rating.	A. 3rd, 4th and 5th semesters.	A. Clinical Coordinator	A. **Yes** 0/2 = 100% 0 out of 2 total unsatisfactory comps were due to inadequate patient instructions.

Action: Track and compare trends.

1. There were no unsatisfactory comps due to inadequate patient instructions for the Class 0f 2023.

2. The Classes of 2022, 2020, and 2019 all met the benchmark at 100%. There was one unsatisfactory comp due to inadequate patient instructions which resulted in a failed comp for the Class of 2021.

3. Students from the Class of 2023 failed their comps due to failing to remove artifacts within anatomy and failing to remove angle on central ray placement (2). Both unsatisfactory comps were in the first CE semester

4. Students failing comps due to lack of appropriate patient instructions has only been documented once over the past 4 years so does not appear to be a problem. We will continue to track the outcome and take appropriate action if warranted.

	B. Anonymous Repeat Images Due to Inadequate Patient Education Questionnaire # 2: Number of	B. ≤ 7.5% of all repeated images due to communication errors.	B. 3rd, 4th, and 5th semesters.	B. Clinical Coordinator	B. **Yes** 264 repeats due to miscommunication/4031 total repeats = 6.5%

	repeated images in clinical education this semester due to patient education communication errors? (Indirect)				

Action: Track and compare trends.
1. The Class of 2023 met the benchmark of ≤ 7.5% of all repeated images were caused by communications errors with a combined average of 6.5% for all three CE semesters. Students performed over 27,600 images during their time in CE with a repeat rate for any reason of 7.8%.
2. The preceding four classes did not meet the benchmark: Class of 2022 8.5%, Class of 2021 14.7%, Class of 2020's 16.5%, Class of 2019 10.8% of all repeated images were due to inadequate patient education.
3. The reflections many students provided on the Anonymous Repeat Images Due to Patient Miscommunication Questionnaire showed they had learned from their mistakes to improve their communication with patients.
4. A new line has been added to the Anonymous Repeat Images Due to inadequate patient education to track the most commonly repeated exams which may produce a new tool.

2. Students will be effective critical communicators in the clinical setting.	A. Clinical Preceptor Student Effective Communication Survey – of surveys returned. (Direct)	A. 100 % of students will score ≥ 3 by the end of the 5th semester	A. 3rd and 5th semesters.	A. Clinical Coordinator	A. **Yes** 10/10 surveys returned for RADT 182 scored ≥3 in the 5th semester

Action: Track data and compare trends.
1. The Class of 2023's score in the 5th semester was 3.9, improving from 3.8 in the 3rd semester.
2. The Class of 2023's average score of 3.9 was higher than any of the previous four years: Class of 2022 (3.86), Class of 2021's (3.63), Class of 2020 (3.76) and the Class of 2019 (3.83).
4. Beginning with the Class of 2022 more emphasis was placed on communication during didactic instruction in RADT 102 Orientation to Radiologic Technology and in RADT 151 and RADT 161 the procedures courses to improve students' communication skills and the additional instruction seems to have an impact. We will continue to track the data to see if other changes are warranted.
4. This year's return of surveys (25) was a good representation of students' communication skills. We still struggle to get all forms returned from the clinical preceptors.

	B. Anonymous Student Radiographer Effective Communication Survey. (Indirect)	B. 100 % of students will have a score ≥ 3 by the end of the 5th semester.	B. 3rd and 5th semesters.	B. Clinical Coordinator	B. **Yes** 12/12 surveys returned for RADT 182 scored ≥3 in the 5th semester

Action: Track data and compare semesters and cohorts.

1. The average score for the Class of 2023 in the 3rd semester was 3.68 and the 5th semester average score was 3.83 showing improvement in students' communication skills as training advanced.

2. Comparison of average scores from 2022 (3.9), 2021 (3.75), 2020 (3.56), 2019 (3.67) demonstrates the Class of 2023 students (3.83) are confident in their communication skills and this is backed up by their clinical preceptors.

3. There were no categories of communication skills that stood out as a weakness for the group in general. One student scored themselves a 2.9 in the first semester. They scored a "2 – disagree" to verbal/non-verbal communication, conciseness of their communication, and follow-up to insure understanding. Those who scored themselves less than a 4 (Strongly agree) in the 5th semester selected many different categories. Form B's from both semesters showed all students were scored as a "4 – Excellent, or 3 – Meets Expectations" by their clinical preceptors. The new Form B starting with the Class of 2024 gives clear objective criteria for clinical preceptors to score students that will help the program to identify students who need extra coaching in their communication skills.

Category V: Professional Growth and Development
Goal V: Students and graduates will behave ethically.

Outcomes	Tools	Benchmark	Tim Frame	Responsibility	Result
1. Students will adhere to ethical standards of practice.	A. Grade Determination Form B-#5: Professional Ethical Conduct. (Direct – Clinical Preceptors)	A. 100 % of students will have a composite score ≥ 3.	A. 3rd and 5th semesters.	A. Clinical Coordinator	A. **Yes** 12/12 students scored ≥ 3 for both semesters. 3rd semester = 3.8 5th semester = 3.9

Action: Track data and compare semesters and cohorts.

1. Every student received a score of ≥ 3. Comparison of the Class of 2023's 5th semester score of 3.9 shows this class has strong ethical behavior.

2. All students' scores showed they remained at a "4 excellent" or improved from the 3rd to 5th semester except one student whose score decreased. The new Form B's rubric will help to clearly identify behavior that may affect a student's score and give the program an opportunity to help the student correct their performance before the end of training.

3. Comparing this class's score to previous cohorts demonstrates the Class of 2023 continues the program's value of high ethical behavior in CE. Fifth semester scores: 2023 (3.9), Class of 2022 (3.83), Class of 2021 (3.92), Class of 2020 (3.5)

	B. Anonymous Student Radiographer Ethics Self-Assessment. (Indirect)	B. 100 % of students will have a score ≥ 3 (usually).	B. 3rd and 5th semesters.	B. Clinical Coordinator	B. **Yes** 23/23 surveys returned all scored ≥ 3. 3rd semester = 3.75 5th semester = 3.86

Action: Track data and compare semesters and cohorts.

1. The Class of 2023 showed personal growth in maintaining their ethical behavior over the three CE semesters, increasing from 3.75 in the 3rd semester to 3.86 in the 5th semester.

2. Question #5 on the survey, "Personally devote time to develop solutions to problems" was the question most often rated lower than any other question. Do students not want to get involved in department problems/solutions or do they lack confidence to propose solutions?

3. All five cohorts (2023, 2022, 2021, 2020, 2019) evaluated under this outcome assessment plan with composite scores of (3.8, 3.95, 3.75, 3.75, and 3.78 respectively) met the benchmark of ≥ 3, indicating that students from the cohorts believe they adhered to ethical standards of practice. Scores have remained stable, far exceeding the benchmark.

4. It is a little concerning that some students only "usually" followed the ethical behavior outlined in the survey. What determines when they do not follow the expected ethical behavior?

5. We will continue to track the outcome.

2. Employers will be satisfied with the overall personal skills (i.e., safety, flexibility, creativity, communication, professionalism) of graduates.	A. CSI Rad Tech Program Class of 2023 Employer Survey questions # 2 - 6: Please rate this person's overall personal skills (i.e., communication, critical thinking, reliability, professionalism).	A. ≥ 90 % combined Strongly Agree (5) or Agree (4) rating of those surveys received.	A. 6+ months after May 2023 graduation.	A. Program Director	A. **Yes** Three surveys from three facilities evaluating 3/12 graduates were returned. The combined rating was 5

Action: Track data and compare semesters and cohorts.

1. Employer surveys were emailed to department managers and St. Luke's Student Services on March 3, 2023. All sites completed the survey.

2. Three surveys from three facilities evaluating three students were returned with a combined rating of 5.

3. All graduates were rated ≥ 4 on questions 2 - 6.

4. The Class of 2023's combined rating of 5 was up from the Class of 2022 (4.6) and the Class of 2021 (4.85). There was incomplete data from 2020 and 2019 to compare this year's cohort to effectively.

5. The employers that responded to the survey continue to be highly satisfied with graduates of the CSI Radiologic Technology Program. Some of the survey comments include: (1) I feel the graduate that we hired is exceptional. She was prepared to work on day 1 and was willing to learn anything we did differently. (2) I am more than pleased with the individuals that I have had the opportunity to work with. (3) I am not sure you can teach this, but there were a couple students that lacked confidence or seemed more shy. Somehow building them up to be more confident and more vocal.

6. For the past two years the surveys have been emailed directly to department managers where graduates are employed, which had increased participation but this year input was down. We will continue to track and compare future cohorts to current data.

		5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree	
2.	**Graduate employee(s) demonstrate appropriate communication skills commensurate of an entry-level technologist**	3					**15/3 = 5**
3.	**Graduate employee(s) demonstrate appropriate medical ethics commensurate of an entry-level technologist**	3					**15/3 = 5**
4.	**Graduate employee(s) demonstrate critical thinking commensurate of an entry-level technologist**	3					**15/3 = 5**
5.	**Graduate employee(s) exhibit a high level of reliability and consistency**	3					**15/3 = 5**
6.	**Graduate employee(s) exhibit professionalism to include appearance, dependability, punctuality, and attendance**	3					**15/3 = 5**

	B. Anonymous RT Radiographer Scope of Practice Survey. (Indirect)	B. 100 % of students who respond to the survey will score ≥ 3.	B. Last day of training.	B. Program Director	B. **NO** 11/12 students rated themselves ≥ 3 on the survey. Composite = 3.8

Action: Track and compare cohorts.

1. The anonymous 19 question survey was given to graduating students at the end of their training when most were already working as student R.T.s to increase participation. The response rate has improved since collecting the survey at the end of training instead of trying to contact graduates after they leave the program. Surveys were received from all 12 graduates.

2. One student scored themselves a 2.7 with 7 out of 16 responses being a 2 (occasionally). This is concerning because quality patient care depends on R.T.s adhering to the ethical standards of the profession. The feedback from Form B (5th semester) showed there was some improvement needed in integrity for one student but there is no way of knowing if this was the same student who evaluated themselves low on this survey.

3. The Class of 2023 scored just below the class of 2022 (3.9), but higher than the Class of 2021 (3.7), 2020 (3.63), 2019 (3.1)

4. We will continue to deliver the survey at the end of training unless the student employment rate drops considerably.

Program Effectiveness Measures
Category I: Graduate Performance

Program Completion Rates	Benchmark for 1.1.1 of ≥ 80% annual graduation rate was met at 100% as 12 out of 12 students completed the program and graduated.
ARRT Pass Rates & Scaled Scores	2 out of 4 benchmarks for 1.1.2 were met. Annual first-time pass rate was not met at ≥ 80% with 67% passing. 5-year first time pass rate was ≥ 80% at 88%. Annual program mean scaled score on the ARRT exam was not met with ≥ 80% at 78%. 5-year program mean scaled score on the ARRT exam was ≥ 80% at 82.6%.
Employment Rates	Benchmark for 1.1.3 of ≥ 80% of those seeking employment (excluding military and continuing education) was met at 100% with 12 out of 12 students obtaining employment within 6 months.
Graduate Satisfaction	Benchmark for 1.1.4 of ≥ 80% of students receiving a quality education was met with 10/12 = 83% answering Yes, 1/12 = 8.3% answering No. One student did not answer the question.
Employer Satisfaction (of Graduate Technical Skills).	The benchmark for 1.1.5 ≥ 95% combined Strongly Agree or Agree rating of those email surveys returned was met with 3 respondents evaluating 3 facilities. 3/3 surveys = 100% rated the graduates at "5" Strongly Agree
Amendments to Category I: Graduate Performance (Program Effectiveness)	None
Summary	6/8 benchmarks reflecting 5 outcomes that were measured for Category 1: Graduate Performance were met. Students are completing the program, graduating, passing the ARRT exam, gaining employment, receiving a quality education, and satisfying employers with their technical competence.

Student Learning Outcomes
(Categories II – V)

Category II: Clinical Performance	3 out of 5 benchmarks reflecting 2 outcomes for Category II: Clinical Performance were met. The benchmarks for 2.2.2.A and 2.2.2.B were not met. Both outcomes identified one student through a direct assessment by clinical preceptors and an anonymous student survey that was not performing to program standards. Other students showed growth throughout their training. Improvements to clinical education beginning with the Class of 2024, including adding additional clinical sites and a trauma rotation should improve the outcome.
Amendments to Category II: Clinical Performance	None

Summary	5 benchmarks reflecting 2 outcomes for Category II: Clinical Performance were measured with 3 out of 5 being met. The outcome showed one student who was not performing up to program standards but overall students are demonstrating that they have the clinical and employability skills of a radiographer.
Category III: Problem Solving and Critical Thinking	3 out of 5 benchmarks reflecting 2 outcomes for Category III: Problem Solving and Critical Thinking were met. 3.3.2.A. was not met. Only 10/12 students scored ≥ 7.5. 3.3.2B was not met with only 11 out of 12 students scoring ≥ 3 by the 5th semester compared to the benchmark of 100% of students scoring ≥ 3. The composite score was 3.7. The student who did not achieve the outcome scored 2.6. The outcome has improved over the past four years since the RADT 153 Image Analysis course was revised in 2020. More emphasize on: (1) the digital exposure variables and their effects on the latent image and digital image quality; (2) focused instruction on applying a practical basic image analysis strategy that ensures diagnostic quality; (3) the use of the new textbook *Radiographic Image Analysis* and; (4) practical image analysis experience using a variety of images, appears to have increased students' image analysis skills.
Amendments to Category III: Problem Solving and Critical Thinking	None
Summary	3 out of 5 benchmarks reflecting 2 outcomes for Category III: Problem Solving and Critical Thinking were met. Students are demonstrating critical problem-solving skills performing a variety of challenging radiography procedures. There is room for improvement in RADT 153 Image Analysis and steps to further revise RADT 153 Image Analysis have been implemented.
Category IV: Communication Skills	4 out of 4 benchmarks reflecting 2 outcomes for Category IV: Communication Skills were met. This year's repeat rate of 6.5% showed progress over last year's repeat rate of 8.5%. Note: The CE weekly exam log was modified to include a line on each page to track repeat images due to communication errors.
Amendments to Category IV: Communication Skills	None
Summary	4 out of 4 benchmarks reflecting 2 outcomes for Category IV: Communication Skills were met.
Category V: Professional Growth and Development	3 out of 4 benchmarks reflecting 2 outcomes for Category V: Professional Growth and Development were met. Benchmark 5.5.2.B was not met. One student rated themselves a 2.7 on the anonymous survey.
Amendments to Category V: Professional Growth and Development	None
Summary	3 out of 4 benchmarks reflecting 2 outcomes for Category V: Professional Growth and Development were met. Students are adhering to ethical standards of practice. Employers are satisfied with graduates' overall personal skills (i.e., safety, flexibility, creativity, communication, professionalism).
Assessment Plan Review	
Summary	19 out of 26 benchmarks (73%) reflecting 13 measured outcomes across 5 categories and 5 goals were met. 3 out of 7 benchmarks not met were anonymous student surveys.
Mission Statement	The program mission statement: The mission of the College of Southern Idaho's Associate of Applied Science Radiologic Technology Program in Radiography is to prepare students to become graduates for entry level employment as ARRT Registered Technologists in Radiography will be reviewed at the 2026 Program Advisory Meeting.

Goals	The program goals established to achieve the mission: (1) Measuring program effectiveness on an ongoing basis; (2) Producing clinically competent students; (3) Producing students with problem solving and critical thinking skills; (4) Producing students who can effectively communicate and interact with patients and staff; and (5) Producing students and graduates who behave ethically will be reviewed at the 2026 Program Advisory Meeting.
Recommended changes to the assessment plan.	Consider replacing outcome 2.2.2.B Anonymous Student Clinical Education Self-Assessment Survey (indirect) with the focus group discussion at the end of the 5th semester for the Class of 2024 Outcome Assessment Plan.
Final Thoughts	