

# College of Southern Idaho Radiologic Technology Program Outcome Assessment Plan for the Class of 2021

**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	<b>Yes</b> 12/12 = 100%
<p><b>Action:</b> Track data and compare trends.</p> <p>1. Completion rates for the program during the past 5 years is trending ≥ 90% as follows: 2021 = 100%, 2020 = 91.6%, 2019 = 91.6%, 2018 = 100%, 2017 = 100%.</p> <p>2. The program's 5 year average completion rate is 96.64% resulting in an attrition of &lt; 4%, which is very low.</p> <p>3. While completing the 2021 self-study, data for the past 10 years was analyzed showing the completion rate for the years 2012 – 2021 is 96.78%.</p>					
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. <b>Yes</b> 12/12 = 100%
<p><b>Action:</b> Track and compare trends.</p> <p>1. The Class of 2021's first-time credentialing examination pass rate of 100% exceeded the program's 5-year first-time average annual pass rate of 94.8% (2021 = 100%, 2020 = 90.9%, 2019 = 90.9%, 2018 = 100%, 2017 = 91.7) by 5.2%.</p>					

<p>2. The 100% first-time credentialing examination pass rate exceptionally exceeded the program benchmark of <math>\geq 80\%</math> annual first-time pass rate.</p> <p>3. The Class of 2021's education was abruptly disrupted when COVID-19 forced their didactic education to be provided on zoom beginning in March of 2020. The students persevered however, attending zoom courses throughout the summer and fall semesters with no breaks to assure clinical education could be completed which had been suspended until July 2020 due to the pandemic.</p>					
	B. 5-year first time pass rate.	B. $\geq 80\%$ 5-year first time pass rate.	B. January 1 to December 31 for graduating class.	B. Program Director.	B. <b>Yes</b> 55/58 = 94.8%
<p><b>Action:</b> Track and compare trends.</p> <p>1. The program's 5-year (2021 – 2017) average first time credentialing pass rate is 94.8% (2021 = 12/12, 2020 = 10/11, 2019 = 10/11, 2018 = 12/12, 2017 = 11/12, = 55/58 = 94.8%).</p> <p>2. This resulted in an exceptionally low 5.2% failure rate.</p> <p>3. <b>ARRT's Average Annual Report of Examinations pass rate for 2016 to 2020</b> is 88.6% (2020 = 88.2% 2019 =89%, 2018 = 89.4%, 2017 = 89.3, 2016 = 87.2), (most current statistic available) compared to CSI's 5-year pass rate of 94.8%.</p> <p>4. The program has 3 first-time credentialing failures in the past five years. The student who failed in 2017 immediately took the exam again and passed. The student who failed in 2019 passed approximately one year later. The student who failed in 2020 has not passed the examination yet.</p>					
	C. Annual program mean scaled score.	C. $\geq 80$ Annual program mean scaled score.	C. January 1 to December 31 for graduating class.	C. Program Director.	C. <b>Yes</b> 12/12 passed 83.9% mean scaled score
<p><b>Action:</b> Track and compare trends.</p> <p>1. The annual program mean scaled score for 2021 is 83.9%, 8.9 points above the ARRT's minimum passing scaled score of 75 and 3.9 points above the program benchmark.</p> <p>2. Four students had a scaled score lower than the program likes to see students scoring (75%, 76%, 77%, 78%). Four students scored a 91% and the rest were in the 80's for a combined scaled score of 83.9%. The low scoring students had been advised they were at risk of a failure from substantiation of their scores on the mock examinations given in their 5<sup>th</sup> and final semester and extra instruction was offered to help increase their score.</p> <p>2. The Class of 2021's annual standard scaled score of 83.9 is .5 points above the 2020 national average of 83.4 as reported in <b>ARRT's Annual Report of Examinations: Primary Eligibility Pathway 2020</b> (most current statistic available).</p> <p>3. 2021's annual scaled score of 83.9 was 1.9 points below the 2020 Idaho mean scale score of 85.8 as reported by ARRT.</p> <p>4. The Class of 2021's mean scaled score (83.9) was 1 point lower than the Class of 2020's score (84.9). Mean scale score Class of 2019 (82.5), Class of 2018 (88.6), Class of 2017 (86.9). This drop in mean scaled score from last year may be due to the disruption in didactic and clinical education due to the pandemic.</p> <p>5. Comparing the program data from 2021 to the state and national data from 2020 may not reflect the hardships students faced moving to online instruction plus disruptions and limitations in clinical education due to the pandemic.</p>					
	D. 5-year program mean scale score.	D. $\geq 80\%$ 5-year program mean scaled score.	D. January 1 to December 31 for graduating class.	D. Program Director.	D. <b>Yes</b> 85.4%

<p><b>Action:</b> Track and compare trends.</p> <p>1. CSI Rad Tech Program's 5 year program mean scaled score of 85.4 (2021 = 83.9, 2020 = 84.9, 2019 = 82.5, 2018 = 88.6, 2017 = 86.9, = <math>426.8 \div 5 = 85.4</math>) is 2 points higher than ARRT's 5 year national mean scale score of 83.4 (2020 = 83.3, 2019 = 83.4, 2018 = 83.6, + 2017 = 83.6, +2016 = 83.3, = <math>417.2 \div 5 = 83.4</math>) as calculated from <b>ARRT's Annual Report of Examinations (2020 – 2016)</b>.</p> <p>2. The five-year program mean scale score is .4 points lower than last year's five-year mean scale score of 85.8. The score has trended downward the past three years but still is above the <math>\geq 80\%</math> program benchmark.</p>					
3. Graduates will be employed within 6 months of graduation.	CSI RT Program Graduate Survey question # 4: students self-reporting job status.	$\geq 80\%$ of those seeking employment of those surveys returned. (Excludes military and continuing education.)	Last day of class during the final spring semester of training. (Note: Students who are not employed as of last day of class are contacted within 6 months of graduation.)	Program Director	<b>Yes</b> 12/12 = 100%
<p><b>Action:</b> Track and compare trends.</p> <p>1. The 5 year average annual job placement rate (2017 – 2021) for students reporting job status has been 100%. (2021 12/12 = 100%, 2020 11/11 = 100%, 2019 10/10 = 100%, 2018 12/12 = 100%, 2017 11/11 = 100%, <math>500\% \div 5 = 56/56 = 100\%</math>).</p> <p>2. As of the last contact with students from the Class of 2021 by CSI's Career Services 11 of the 12 students were working while 1 was pursuing more education. This student was working at the time of graduation. Two other students are also actively enrolled in another educational institution furthering their education.</p>					
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.)	$\geq 80\%$ students answer YES of those who returned surveys and answered the question.	Last day of class during final spring semester.	Program Director	<b>Yes</b> 12/12
<p><b>Action:</b> Track and compare trends.</p> <p>1. Over the past five years, 58/58 graduates (100%) have answered YES to the question: Did the CSI Radiologic Technology Program adequately prepare you for entry level employment as an ARRT Registered Technologist in Radiography ( 2021 = 12/12 = 100%, 2020 = 11/11 = 100%, 2019 = 11/11 = 100%, 2018 = 12/12 = 100%, 2017 = 12/12 = 100%)</p>					

2. 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	<b>Yes</b> 100% 4 respondents evaluating 11/12 graduates working in 6 facilities
<p><b>Action:</b> Track and compare trends.</p> <p>1. Surveys returned from the past six years show employers were satisfied with the technical skills of graduates they employed (2016 = 5/5 = 100%, 2017 = 2/2 = 100%, 2018 = no data, 2019 = 6/6 = 100%, 2020 = no data, 2021 11/11 = 100%).</p> <p>1. The composite score from all surveys returned was 4.72 out of 5 points possible.</p> <p>2. Three students were rated as a “4” = Agree. Comments on these forms included more c-arm and fluoro time along with grid refreshers.</p> <p>3. The return on surveys was improved from previous years. We received feedback on 11 graduates vs. 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.</p> <p>4. Employers have reported satisfaction with graduates in the past but the number of surveys returned was sparse. This new method of sending out surveys should give us more data to track and compare in the future.</p>					
<h2>Category II: Clinical Performance.</h2> <h3>Goal II: Students will be clinically competent.</h3>					
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 first attempt.	A. 3 <sup>rd</sup> , 4 <sup>th</sup> , and 5 <sup>th</sup> semesters.	A. Clinical Coordinator	A. <b>Yes</b> 619/632 = 98%
<p><b>Action:</b> Track and compare trends.</p> <p>1. The Class of 2021 reported 13 unsatisfactory comps: 7 in the first CE semester and 6 in the second CE semester. No unsatisfactory comps were reported in the third CE semester. This shows students were gaining confidence and skills to comp their mandatory and elective competencies with success on their first attempt as they progressed through the program.</p> <p>2. The Class of 2020 reported 6 Unsatisfactory Comps. The Class of 2019 reported 7 Unsatisfactory comps. Both numbers seem low.</p> <p>3. A new chain of possession for unsatisfactory comps has been implemented so all unsatisfactory comps are reported directly to the Clinical Coordinator within 24 hours of the unsatisfactory attempt.</p> <p>3. The Class of 2021 deserves praise for their persistence to complete clinical education under unprecedented hardship. Their tenacity proved that a strong will to succeed will overcome adversity.</p>					

	B. All venipuncture lab competency evaluations. (Direct)	B. 100% of students will pass their venipuncture lab competency evaluation.	B. 5 <sup>th</sup> semester	B. RADT 165 Instructor	B. <b>Yes</b> 12/12 = 100%
<p><b>Action:</b> Track and compare trends. All students passed their venipuncture lab competency evaluation with 100% accuracy. Last year we did not have the actual lab assessments – only the grade from the instructor.</p> <p><b>Note:</b> 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.</p>					
	C. Trauma Case Study Part 2: #1 How well you feel your clinical experience has prepared you for trauma radiography? (Indirect)	C. 100 % of students will score $\geq 3$ .	C. 5 <sup>th</sup> semester	C. Clinical Coordinator	C. <b>Yes</b> 12/12 $\geq 3$
<p><b>Action:</b> Track and compare trends.</p> <ol style="list-style-type: none"> <li>All students reported a score of 3 (Prepared) on a scale of 1 Poorly prepared to 4 Highly prepared.</li> <li>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.</li> <li>An evening CE rotation has been established at SLMV to place students in the Emergency Department during high trauma probability periods (evenings).</li> <li>The clinical affiliation with Intermountain Medical Center, a trauma one facility in SLC, UT is still on hold due to COVID. Students are interested in the opportunity to attend a short CE rotation there to bolster their trauma experience.</li> <li>Students complete Bontrager’s Unit 15: Trauma, Mobile, and Surgical Radiography in the 4<sup>th</sup> semester of training. During RADT 151 (2<sup>nd</sup> Spring) and RADT 162 (2<sup>nd</sup> Fall) instructors continue to reinforce basic trauma, mobile, and surgical positioning concepts while teaching routine entry level radiographic procedures.</li> </ol>					
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 $\geq 3$ .	A. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	A. Clinical Coordinator	A. <b>Yes</b> 12/12 = 100%
<p><b>Action:</b> Track and compare trends.</p> <ol style="list-style-type: none"> <li>The 3<sup>rd</sup> and 5<sup>th</sup> semester combined average scores on Form B were 3.71 and 3.72 respectively. Significantly higher than the benchmark of <math>\geq 3</math>.</li> <li>The average score of 3.72 was on par with the Class of 2020’s average score of 3.76.</li> </ol>					

	B. Anonymous Student Clinical Education Self- Assessment Survey. (Indirect)	B. 100 % of students will score $\geq 3$ .	B. 3 <sup>rd</sup> , 4 <sup>th</sup> , 5 <sup>th</sup> semesters.	B. Program Director	B. <b>No</b> 3 <sup>rd</sup> semester 2.5 6/12 $\geq 3$ 4 <sup>th</sup> semester 3.1 10/12 $\geq 3$ 5 <sup>th</sup> semester 3.5 12/12 $\geq 3$
<p><b>Action:</b> Track and compare trends.</p> <ol style="list-style-type: none"> <li>1. Students in the 3<sup>rd</sup> semester (1<sup>st</sup> CE semester) scored an average of 2.5, 4<sup>th</sup> semester (2<sup>nd</sup> CE semester) scored an average of 3.1, 5<sup>th</sup> semester (3<sup>rd</sup> CE semester) scored 3.5 for an overall average of 3.1.</li> <li>2. The scores improved each CE semester showing growth as students gained more experience and confidence.</li> <li>3. The Class of 2020 scored an average of 3.17, slightly higher than the Class of 2021.</li> </ol> <p>Note: The outcome may be reworded to “100% of students will score <math>\geq 3</math> by the end of their 5<sup>th</sup> semester”.</p>					
<h2>Category III: Problem Solving and Critical Thinking</h2> <h3>Goal III: Students will possess problem solving and critical thinking skills.</h3>					
Outcome	Tool	Benchmark	Time Frame	Responsibility	Result
1. Students will demonstrate critical problem-solving skills performing a variety of challenging radiography procedures.	A. Grade Determination Form B # 3: The student thinks and acts creatively.	A. 100 % of students will score $\geq 3$ .	A. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	A. Clinical Coordinator	A. <b>Yes</b> 3 <sup>rd</sup> semester 3.2 5 <sup>th</sup> semester 3.5
<p><b>Action:</b> Track and compare trends.</p> <ol style="list-style-type: none"> <li>1. 3<sup>rd</sup> and 5<sup>th</sup> semester combined average scores were 3.2 and 3.5 respectively suggesting critical problem solving skills grew during student’s training.</li> <li>2. Comparing the Class of 2020’s 3<sup>rd</sup> and 5<sup>th</sup> semester combined average scores of 3.86 and 3.71 respectively shows critical problem solving skills diminished slightly for the Class of 2021. The trend will be watched.</li> </ol>					
	B. CSI RT Program Evaluation of Clinical Site # 1 (Gave student opportunities to participate in various radiographic procedures) and	B-1. 100 % of students will score $\geq 3$ .	B-1. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	B-1. Clinical Coordinator	B-1. <b>Yes</b> 4.6

	# 23 (An adequate number of procedures).	B-2. 100 % of students will score $\geq 3$ .	B-2. 3rd and 5th semesters.	B-2. Clinical Coordinator	B-2 <b>Yes</b> 4.5							
	#1: Opportunities to Participate					#23: Adequate Number of Procedures						
<b>Key</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>		<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	
SLMV	8	6	2				11	4	1			
IOC	9	2					9	1	1			
MP2	7	4					7	2	2			
NCMC	2	1					2	1				
SLE	1		1						2			
MMH	3						2		1			
CRMC	4		1				2	1	2			
SLWR	2						1	1				
SLJ	3						2		1			
<b>Total</b>	<b>39</b>	<b>13</b>	<b>4</b>				<b>36</b>	<b>10</b>	<b>10</b>			
	X 5	X 4	X 3				X 5	X 4	X 3			
	195	52	12	= 259/56	= 4.6		180	40	30	= 250/56	= 4.5	
<p><b>Action:</b> Track and compare trends.</p> <ol style="list-style-type: none"> <li>The score for the Class of 2021 were slightly lower (4.6 and 4.5) than the scores for 2020 (4.8 and 4.68) and 2019 (4.8 and 4.75).</li> <li>This downward trend is not unexpected as COVID-19 limited students' opportunities to work with COVID positive patients for most of their CE experience.</li> <li>All students agreed there were an adequate number of exams and availability of opportunities for students to participate in exams even with the limitations placed on students because of the pandemic.</li> <li>Clinical education rotations have been altered slightly to incorporate the St. Luke's Jerome rotation into a St. Luke's Magic Valley rotation so all students have more access to fluoro (c-arm) exams. St. Luke's Jerome does not have fluoro or surgical exams. The change will allow students to spend a longer period of time in each of the rotations within the St. Luke's Magic Valley rotation increasing their confidence in the exams performed within the department or clinic.</li> <li>The St. Luke's Addison Clinic has been approved by the JRCERT as a clinical site providing one more facility for students to rotate through.</li> </ol>												
2. Students will demonstrate basic analog and digital image analysis.	A. RADT 151 Radiographic Procedures Lab Assessment, #1-3 (Direct)	A. 100 % of students will score $\geq 3$ .	A. 2 <sup>nd</sup> semester.	A. RADT 151 Instructor.	A. <b>Not completed</b> because the course was moved to online instruction due to COVID.							

**Action:** Track and compare trends.

1. The Class of 2021's didactic instruction was interrupted when all CSI courses moved to online instruction (Zoom) in March 2020. Prior to moving to online instruction students had been evaluated during the Procedures Lab (RADT 151L) on a weekly basis. The students had been performing well in lab so it was determined the lab assessment could be suspended since we had no access to the Rad Tech lab because the CSI campus was closed.
2. The Class of 2020 exceeded the benchmark of  $\geq 3$  with a score of 3.6, the Class of 2019 did not meet the benchmark with a score of 2.3.

	B. Student Image Analysis Self-Assessment Survey, #1-5. (Indirect)	B. 100 % of students will score $\geq 3$ .	B. 5 <sup>th</sup> semester.	B. Clinical Coordinator	B. <b>No</b> 11 out of 12 students scored $\geq 3$ with a composite score of 3.7
--	---	---	---------------------------------	----------------------------	--

**Action:** Track and compare trends.

1. The Class of 2021's composite score of 3.7 was up from the Class of 2020's score of 3.2 and the Class of 2019's score of 3.6.
2. The benchmark was not met because one student scored themselves at a 2.6, below the benchmark of  $\geq 3$ .
3. The student with a score of 2.6 scored themselves with a "2" on question #2 "How confident do you feel in assessing CR placement on a radiograph?" and question #4 "How confident do you feel correcting exposure techniques based on the deviation index (DI)?" The anonymous survey was given at the end of training in the 5<sup>th</sup> semester. It may be worthwhile to give the survey at the end of the 3<sup>rd</sup> semester also to evaluate if students are struggling with concepts but are afraid to speak up.
4. 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 due to motion prior to making an x-ray exposure.	A. All Unsatisfactory Competency Evaluation Task # 14: Patient Instructions. (Direct)	A. $\geq 95\%$ combined satisfactory rating.	A. 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> semesters.	A. Clinical Coordinator	A. <b>No</b> 12/13 = 92.3% 1 out of 13 total unsatisfactory comps was due to inadequate patient instructions.

**Action:** Track and compare trends.

1. There was one unsatisfactory comp due to inadequate patient instructions which resulted in a failed comp but the lack of instructions did not cause motion on the images. The student failed the chest comp due to patient instructions, arms not completely raised, positioning (rotation), and lack of shielding. The student also forgot to ask the patient for their history. The comp was attempted very early in the first CE semester so the student may have been nervous trying to get their first comp.



2. Both 2019 and 2020 met the benchmark at 100%.
3. Students failing comps due to lack of appropriate patient instructions has only been documented once over the past 3 years so does not appear to be a problem. We will continue to track the outcome and take appropriate action if warranted.
4. We propose the outcome statement be changed to “Students will provide appropriate patient instructions that prevent repeats prior to making an x-ray exposure”. Eliminating “due to motion” would make the outcome more encompassing of issues with patient instructions.

	<p>B. Anonymous Repeat Images Due to Patient Miscommunication Questionnaire # 1: How many repeated images due to patient instructions - communications error. (Indirect)</p>	<p>B. ≤ 7.5% of all estimated repeated images due to communications errors.</p>	<p>B. 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> semesters.</p>	<p>B. Clinical Coordinator</p>	<p>B. <b>No</b> 417 repeats due to miscommunication/2829 total repeats = 14.7%</p>
--	--	---	---	------------------------------------	--

**Action:** Track and compare trends.

1. The Class of 2021 did not meet the benchmark of ≤ 7.5% of all repeated images due to communications errors. Their reported repeat rate from patient miscommunication of 14.7% is almost double the benchmark of ≤ 7.5%. The percent is lower than the Class of 2020’s rate (16.5%) but higher than the Class of 2019 (10.8%).
2. A new line was added to the Weekly Exam Log to track # Repeats, Total # Images, Repeat Rate, and Repeats due to communication. Students also record the reason for any repeat in the Notes column on the log. This has eliminated the inconsistencies in data collection and estimating data from earlier cohorts. The weekly exam log directions clearly state the directions for documenting repeat images. Students are made aware of the importance of tracking their repeats in the CE workshop held prior to the first CE semester (summer).
3. The reflection 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. The overall repeat rate for all three CE semesters was 10.08% with 14.7% of those being from patient miscommunication. It would be interesting to know what the repeat rate due to patient miscommunication is for RTs to compare to students repeat rate.
5. For 2019 data assembled the first time was only for the 5<sup>th</sup> semester. Data reporting was inconsistent and an attempt was made to estimate repeats due to communication errors at 10.8% which failed to meet the benchmark of 7.5%. For 2020 all three semester were assessed for repeats due to communication errors and although students did a better job at reporting data, there were many inconsistencies in student data reporting that once again required an estimation of repeats due to communication errors and this time the results showed a significant increase at 16.5% for 2020 compared to 10.8% for 2019 with the same benchmark of 7.5%. **Note:** Here was our method of calculating the percent of repeated images due to communications errors. (1) Estimate total number of images per student = 2320 images X 11 students = 26,074 estimated total number of images obtained during the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> semesters for RADT 180, 181, 182 Clinical Education I, II, III. (2) Estimate total number of repeated images during the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> semesters = 1488. (3) Estimate total number of repeated images due to communication errors = 246. (5) Estimate repeated images NOT due to communications errors = 1488 - 246 = 1242. (6) Calculate estimated percent of repeated images due to communication errors = 246 ÷ 1488 = 16.5%.
6. We propose the outcome be changed to eliminate the word “estimated” since a reliable way to track repeats due to patient miscommunication is now in place.

7. Possibly the benchmark is set too low to reflect the realities of patient interactions out of the students' control.					
2. Students will be effective critical communicators in the clinical setting.	A. Clinical Instructor Student Effective Communication Survey – of surveys returned. (Direct)	A. 100 % of students with a composite score $\geq 3$ .	A. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	A. Clinical Coordinator	A. <b>Yes</b> 3.63 average score Out of 20 surveys returned
<p><b>Action:</b> Track data and compare trends.</p> <ol style="list-style-type: none"> <li>1. The Class of 2021's average score (3.63) declined from the Class of 2020 (3.76) and the Class of 2019 (3.83) showing a downward trend in perceived student communication by their clinical preceptors.</li> <li>2. Only one student received a score of <math>&lt; 3</math> on a question showing clinical preceptors "agreed" students were communicating well.</li> <li>3. More emphasis on communication will be placed 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.</li> <li>4. We are still having some issues getting all of the surveys from clinical preceptors returned but this year's return (20) was far better than last year's (11). Emphasis will be placed during the Clinical Preceptor Workshop of the importance to collect all data to demonstrate validity to the outcome.</li> </ol>					
	B. Anonymous Student Radiographer Effective Communication Survey. (Indirect)	B. 100 % of students will have a composite score $\geq 3$ .	B. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	B. Clinical Coordinator	B. <b>No</b> 3 <sup>rd</sup> semester 3.21 5 <sup>th</sup> semester 3.76 (4 of the 8 surveys returned 3 <sup>rd</sup> semester scored $< 3$ )
<p><b>Action:</b> Track data and compare semesters and cohorts.</p> <ol style="list-style-type: none"> <li>1. Although the composite score for the 3<sup>rd</sup> semester was a 3.21, four of the eight surveys returned scored <math>&lt; 3</math> in the 3<sup>rd</sup> semester. All of the surveys (12) returned in the 5<sup>th</sup> semester showed a score <math>\geq 3</math> with a composite score of 3.76.</li> <li>3. Comparison of 2020 3<sup>rd</sup> and 5<sup>th</sup> semesters were identical (3.56 and 3.56 respectively) demonstrating no growth over the program duration.</li> <li>4. Both 2019 and 2020 cohort composite scores (3.67 and 3.56 respectively) met the benchmark of <math>\geq 3</math>, indicating that both cohorts more than agreed they are communicating effectively.</li> <li>5. We propose the benchmark be changed to "100% of students will have a score of <math>\geq 3</math> by the end of the 5<sup>th</sup> semester." Half the surveys returned in the 3<sup>rd</sup> semester did not score a 3 but all of the surveys returned 5<sup>th</sup> semester scored <math>\geq 3</math> demonstrating growth throughout the program. Because the survey is anonymous there is no way to calculate a composite score for the two semesters.</li> </ol>					

## 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)	A. 100 % of students will have a composite score $\geq 3$ .	A. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	A. Clinical Coordinator	A. <b>Yes</b> 12/12 students scored $\geq 3$ for both semesters. 3 <sup>rd</sup> semester = 4 5 <sup>th</sup> semester = 3.92 Composite = 3.96
<p><b>Action:</b> Track data and compare semesters and cohorts.</p> <ol style="list-style-type: none"> <li>1. Clinical Preceptors scored all students in the 3<sup>rd</sup> semester with a “4 – Excellent” rating, while 11/12 students also scored a “4” in the 5<sup>th</sup> semester with one student scoring a “3” showing clinical preceptors and clinical staff believe students have excellent professional ethical conduct.</li> <li>2. Comparison of the Class of 2021 to 2020 3<sup>rd</sup> semester (4 and 3.9 respectively) and 5<sup>th</sup> semesters (3.92 and 3.5 respectively) demonstrates an improvement for 2021. Interesting that both cohorts score declined in the 5<sup>th</sup> semester over the 3<sup>rd</sup> semester.</li> <li>3. The composite scores for the 2021, 2020, and 2019 cohorts (3.96, 3.74 and 3.95 respectively) greatly exceeded the benchmark of <math>\geq 3</math>, indicating that RTs and CPs believe students from these cohorts adhered to ethical standards of practice.</li> </ol>					
	B. Anonymous Student Radiographer Ethics Self-Assessment. (Indirect)	B. 100 % of students will have a composite score $\geq 3$ .	B. 3 <sup>rd</sup> and 5 <sup>th</sup> semesters.	B. Clinical Coordinator	B. <b>Yes</b> 21/21 surveys returned all scored $\geq 3$ . 3 <sup>rd</sup> semester = 3.7 5 <sup>th</sup> semester = 3.8 Composite = 3.75
<p><b>Action:</b> Track data and compare semesters and cohorts.</p> <ol style="list-style-type: none"> <li>1. Comparison of the Class of 2021 3<sup>rd</sup> and 5<sup>th</sup> semesters were about the same (3.7 and 3.8 respectively) showing slight growth over the training period.</li> <li>1. The Class of 2021 scored identical to the Class of 2020 for 3<sup>rd</sup> and 5<sup>th</sup> semesters (3.7 and 3.8 respectively for both groups).</li> <li>3. All three cohorts (2021, 2020, 2019) composite scores (3.75, 3.75, and 3.78 respectively) met the benchmark of <math>\geq 3</math>, indicating that students from the cohorts believe they adhered to ethical standards of practice. Scores have remained stable far exceeding the benchmark.</li> <li>4. We propose the benchmark be changed to “100% of students will have a score <math>\geq 3</math>” since this is an anonymous survey.</li> </ol>					
2. Employers will be satisfied with the overall personal skills (i.e., safety, flexibility, creativity, communication,	A. CSI Rad Tech Program Class of 2021 Employer Survey questions # 2 - 6: Please rate this person’s overall	A. $\geq 90$ % combined Strongly Agree (5) or Agree (4) rating of those surveys received.	A. 6 months after May 2021 graduation.	A. Program Director	A. <b>Yes</b> Four surveys from six facilities evaluating 11/12 graduates were

professionalism) of graduates.	personal skills (i.e., communication, critical thinking, reliability, professionalism).				returned. The combined rating was 4.85
--------------------------------	---	--	--	--	--

Action:

1. Employer surveys were emailed to department managers on February 28, 2022.
2. Three employer surveys were not returned (Minidoka Memorial Hospital – Rupert, St. Alphonsus Medical Center – Boise, and Primary Children’s Hospital – SLC) even after multiple reminders to complete the survey.
3. Four surveys from six facilities evaluating 11 students were returned with a combined rating of 4.85. Note: Graduates working at St. Luke’s Magic Valley, St. Luke’s Wood River, and St. Luke’s Jerome were all evaluated together.
4. Only one graduate was rated less than a “4” on all of the questions. The evaluator rated the graduate a “3” (neutral) on question #4 concerning critical thinking skills. No feedback was received regarding the facilities concerns about critical thinking.
5. Employers continue to be satisfied with graduates of the CSI Radiologic Technology Program.
6. With better response from employers we will be able to track and compare cohorts annually.

		5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree	
2.	Graduate employee(s) exhibit appropriate communication skills commensurate of an entry-level technologist	8	3				4.72
3.	Graduate employee(s) demonstrate appropriate medical ethics commensurate of an entry-level technologist	11					5
4.	Graduate employee(s) demonstrate critical thinking commensurate of an entry-level technologist	8	2	1			4.64
5.	Graduate employee(s) exhibit a high level of reliability and consistency	10	1				4.9
6.	Graduate employee(s) exhibit professionalism to include appearance, dependability, punctuality, and attendance	11					5
							24.26/5 = 4.85

	B. Anonymous RT Radiographer Scope of Practice Survey. (Indirect)	B. 100 % of students who respond to the survey will have a composite score ≥ 3.	B. Last day of training.	B. Program Director	B. <b>No</b> 11/12 students rated themselves ≥ 3 on the survey. Composite = 3.7
Action: Track and compare cohorts.					

1. This anonymous 19 question survey was given to graduating students at the end of their training when most were already working as student RTs to increase participation. All graduating students returned the survey. A much better response than previous years. Only 2 surveys were returned in 2019.
2. The Class of 2021's composite score of 3.7 indicates students take their responsibility to maintain the ASRT Radiographer Scope of Practice Standards seriously.
3. One student's composite score for the survey was a 2.9, rating themselves a "2 – Occasionally" on how closely you believe in and follow the ASRT Radiographer Scope of Practice Standards on question # 4 "Verifying informed consent for applicable procedures".
4. More emphasis on the ASRT Radiographer Scope of Practice Standards will be integrated throughout training as a score of "3" = Usually is concerning. The Practice Standards should *always* be practiced and students should understand why that is important.

## Program Effectiveness Measures

### Category I: Graduate Performance

Program Completion Rates	Benchmark for 1.1.1 of $\geq 80\%$ annual graduation rate was met at 100% as 12 out of 12 students completed the program and graduated.
ARRT Pass Rates & Scaled Scores	All 4 benchmarks for 1.1.2 were met. Annual first time pass rate was $\geq 80\%$ at 100%. 5-year first time pass rate was $\geq 80\%$ at 94.8%. Annual program mean scaled score on the ARRT exam was $\geq 80\%$ at 83.9. 5-year program mean scaled score on the ARRT exam was $\geq 80\%$ at 85.4.
Employment Rates	Benchmark for 1.1.3 of $\geq 80\%$ 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 $\geq 80\%$ of students receiving a quality education was met at 100% for all 12 students.
Employer Satisfaction (of Graduate Technical Skills).	The benchmark for 1.1.5 $\geq 95\%$ combined Strongly Agree or Agree rating of those email surveys returned was met with 4 respondents evaluating 6 facilities and 11/12 graduates was met at 100%.
Amendments to Category I: Graduate Performance (Program Effectiveness)	None
Summary	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	4 out of 5 benchmarks reflecting 2 outcomes for Category II: Clinical Performance were met. 2.2.2.B. was not met with 6 out of 12 students scoring $< 3$ in the 3 <sup>rd</sup> training semester compared to the benchmark of a $\geq 3$ score. Their composite score was 2.5 for the group in the 3 <sup>rd</sup> semester. Their scores improved the 4 <sup>th</sup> semester with only 2 out of 12 students scoring $< 3$ with a
-----------------------------------	--

	composite score of 3.1. In the 5 <sup>th</sup> semester all students scored $\geq 3$ with a composite score of 3.5 showing growth for all students over their training period. The average score over the three semesters of training was 3.1.
Amendments to Category II: Clinical Performance	None
Summary	4 out of 5 benchmarks reflecting 2 outcomes for Category II: Clinical Performance were met. 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 completed due to the course being moved online and campus being closed because of the COVID-19 pandemic. 3.3.2B was not met with only 11 out of 12 students scoring $\geq 3$ compared to the benchmark of 100% of students scoring $\geq 3$ . The composite score was 3.7. The student who did not achieve the outcome scored 2.6. The RADT 153 Image Analysis course was revised in 2020 to emphasize more: (1) focused instruction on the analog and 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 insures diagnostic quality; and (3) practical image analysis experience using a variety of images.
Amendments to Category III: Problem Solving and Critical Thinking	3.3.2.B. will be given to students in the 3 <sup>rd</sup> semester of training along with the 5 <sup>th</sup> semester.
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 revise RADT 153 Image Analysis have been implemented.
Category IV: Communication Skills	Only 1 out of 4 benchmarks reflecting 2 outcomes for Category IV: Communication Skills were met. 4.4.1.A. did not meet the benchmark of $\leq 5\%$ competency evaluation failure due to inadequate patient instructions on Competency Evaluations with 1/13 (7.7%) failure due to inadequate patient instructions. 4.4.1.B. was not met with students having 14.7% of all repeated images due to communications errors instead of the benchmark of $\leq 7.5\%$ . 4.4.2.B. was not met because 4/8 of the anonymous surveys returned in the 3 <sup>rd</sup> semester scored $< 3$ with a composite score of 3.21. All of the surveys returned in the 5 <sup>th</sup> semester scored $\geq 3$ with a composite score of 3.76 showing growth during the training period. Note: The CE weekly exam log was modified to include a line on each page to track repeat images due to communication errors. This year's data is more accurate than previous years when the data was estimated. The total repeat rate for the cohort was 10.08% with only 14.7% of those due to communication errors.
Amendments to Category IV: Communication Skills	The wording of 4.4.1.A. will be changed to reflect all patient instructions for future OA plans. The wording of 4.4.1.B. will be changed to remove the word "estimate from the benchmark." The benchmark for 4.4.2.A & B will be changed to evaluate the outcome at the end of the 5 <sup>th</sup> semester.
Summary	Only 1 out of 4 benchmarks reflecting 2 outcomes for Category IV: Communication Skills were met. Students are perceived as effective critical communicators in the clinical setting by their Clinical Preceptors with an average score of 3.63. Students rated themselves lower with a composite score of 3.5. Even though three of the benchmarks were not met, students showed growth as they progressed through their training.
Category V: Professional Growth and Development	3 out of 4 benchmarks reflecting 2 outcomes for Category V: Professional Growth and Development were met. One student had a composite score of 2.9 on Anonymous RT Radiographer Scope of Practice Survey which is less than the benchmark of

	≥ 3 for all students.
Amendments to Category V: Professional Growth and Development	None
Summary	4 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).
<b>Assessment Plan Review</b>	
Summary	19 out of 26 benchmarks (73%) reflecting 13 measured outcomes across 5 categories and 5 goals were met. Outcome 3.3.2.A. (RADT 151 Radiographic Procedures Lab Assessment) was included in the total number of benchmarks but not measured because it was not completed for the Class of 2021 due to the campus being closed and classes being moved online during the beginning of the COVID-19 pandemic.
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 April 2022 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 April 2022 Program Advisory Meeting.
Recommended changes to the assessment plan.	
Final Thoughts	The Class of 2021 Outcome Assessment Plan was assessed at the annual program advisory committee meeting on April 13, 2022.