

Assessment Year: 2017

BSRS Program Objectives

Graduates of the BSRS program should be able to:

- Perform quality radiographic procedures.
- Develop assessment skills of a radiographer.
- Evaluate a clinical situation and perform accordingly using critical thinking skills.
- Propose a plan to respond to imaging department scenarios.
- Demonstrate service to the profession and the community.
- Integrate adherence to professional behaviors.
- Develop oral communication skills.
- Develop written communication skills.

Methodology

1. Data from assessment tools are collected and sent to the program director.
2. Data is collected during the spring, summer, and fall semesters of a calendar year.
2. The program director enters the data into the tables for each SLO.
3. The results are shared with the BSRS Assessment Committee. The committee discusses data analysis, interpretation, actions, trends, results, and future plans.
4. The BSRS Assessment committee findings are discussed in the School of Allied Health faculty meetings. Additional insights and actions are added to the assessment plan as necessary.

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Goal 1: Students will be CLINICALLY COMPETENT radiologic technologist.								
Student Learning Outcomes	Tool	Benchmark	Results					
1.1 Students will perform quality radiographic procedures.	A. RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q16: Quality of work and performance	100% of students will score at least 3.5/5 on the quality of work and performance question.				2017	2016	2015
			N			24	25	32
			Met			24	24	32
			Mean			5	3.96	4.25
			Range			5	3-4	4-5
	%			100	96	100		
	B. RADS 3310 (Positioning I): Comprehensive Lab Final Exam	100% of students will score 85 or higher					2017	2016
			N				54	35
			Met				23	18
			Mean				81.59	82.2
			Range				65-95	17-98
	%				42	51		
	C. RADS 3820 (Positioning II): Comprehensive Lab Final Exam	100% of students will score 85 or higher					2017	2016
			N				43	26
			Met				14	21
Mean						80.6	81.76	
Range						37-92	43-100	
%				32	81			
1.2 Students will develop assessment skills of a radiographer.	A. RADS 3840 (Advanced Patient Care): Comprehensive Final Exam	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	43	21	35	32	30
			Met	30	17	30	30	29
			Mean	88	90	92	87	93
			Range	45-83	65-96	72-100	68-100	77-100
%	69	81	86	94	97			

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	B. RADS 3820 (Positioning 2): Trauma lab scenario	100% of students will score 85 or Higher.		2017	2016	2015	2014	2013
			N	43	26	36	30	29
			Met	38	22	35	29	18
			Mean	93	92	93	90	91
			Range	75- 100	82- 100	81- 100	76- 100	72- 98
			%	88	91	95	97	62

SLO: 1.1 Students will perform quality radiographic procedures.

Findings:

Measure A: RADS 4611: Clinical Instructor Evaluation of Student Q16: Quality of work and performance

2017: Met—100% of students achieved a 3.5 or higher.
 2016: Unmet—only 96% of students achieved 3.5 or higher.
 2015: Met—100% of students achieved 3.5 or higher.
 2014: Data not available.
 2013: Data not available.

Measure B: RADS 3310 (Positioning I): Comprehensive Lab Final Exam

2017: Unmet—only 42% of students achieved 85% or higher.
 2016: Unmet—only 51% of students achieved 85% or higher.
 2015: Data not available.
 2014: Data not available.
 2013: Data not available.

Measure C: RADS 3820 (Positioning II): Comprehensive Lab Final Exam

2017: Unmet—only 32% of students achieved 85% or higher.
 2016: Unmet—only 81% of students achieved 85% or higher.
 2015: Data not available.
 2014: Data not available.

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2013: Data not available.

Analysis: SLO: 1.1 Students will perform quality radiographic procedures.

The first SLO assesses whether the student is able to perform quality radiographic procedures, which is an indicator of the first goal which is to produce a clinical competent radiologic science student. There are three measures used to assess the first SLO. One of the three measures improved from the 2016 Assessment Year (AY) to the 2017 AY, while for two measures there was a downward trend for the 2017 AY.

Measure A: RADS 4611: Clinical Instructor Evaluation of Student Q16: Quality of work and performance: This measure is derived from the evaluation of clinical students and measures the student's quality of work and performance in the clinical setting. In the 2016 AY, this measure was unmet. Based on the analysis of the 2016 assessment cycle results, faculty began a campaign to reinforce to the students the importance of constant quality improvement in their overall clinical work and performance. This campaign included the following items: counseling students regarding clinic expectations; increase in the frequency of student/faculty evaluations, so to alert the student of his/her standing; and meeting with clinical faculty to ensure consistent evaluations of students. The downward trend from last year (2016) was reversed for the current assessment cycle. For the 2017 AY, this measure was met, with 100% of the students scoring a 3.5 or higher on a 5-point Likert scale addressing student work and performance, indicating that the majority of students were demonstrating an appropriate quality of work and performance.

Measure B: RADS 3310 (Positioning I): Comprehensive Lab Final Exam: This measure addresses the students' ability to perform quality radiographic procedures through a simulated positioning lab exam. In the 2016 AY this measure was unmet, as only 51% of the students scored an 85 or higher on this exam. Based on the analysis of the 2016 assessment cycle results, faculty implemented a two-phase plan to increase students' ability to perform quality radiographic procedures: 1) increase the number of practice labs for students to work on their radiographic procedures skills, and 2) the implementation of a virtual positioning software called "Shaderware." "Shaderware" allows the student the opportunity to practice radiographic skills using an assimilated virtual software. In the 2017 AY, there was an overall decline in meeting this benchmark, as only 42% of the students scored an 85 or higher. However, it is believed that there was a slight improvement in the procedural skills of the students, as the range for this measure was markedly improved (65-95 vs. 17-98). The mean for the two years remained relatively unchanged, however: 2016-82.2 vs. 2017-81.59.

Measure C: RADS 3820 (Positioning II): Comprehensive Lab Final Exam: This measure addresses the students' ability to perform quality radiographic procedures through a simulated positioning lab exam in the students' second level of radiographic procedures. In the 2016 AY, this measure was unmet, as only 81% of the students scored an 85 or higher, indicating that 19% of the students did not successfully demonstrate the performance of quality radiographic procedures. Based on the analysis of the 2016 assessment cycle results, faculty implemented several new learning strategies. First, students were offered several

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“practice” labs to perfect their performances of radiographic procedures. Second, a virtual radiographic procedure software known as “Shaderware” was installed on student computers. Students were encouraged to use this software, and several grades were associated with this new software. “Shaderware” allows the student the opportunity to practice radiographic skills using an assimilated virtual software. Finally, there was frequent faculty feedback to the students in the actual clinic setting. The results of these plans were not encouraging. In the 2017 AY, only 32% of the students scored an 85 or higher on the RADS 3820 final exam, indicating that the students were not accurately performing quality radiographic procedures. This finding was unfortunate, considering the new software that was available for students. While reviewing this score, it was noted that the majority of students who scored below an 85 on the lab final had also scored below an 85 on the first three lab exams. Because of this finding, the faculty decided to incorporate even more changes to the course and this measure. Also, student learning contracts will be implemented in 2018 AY. The contracts will require students to attend tutoring, remedial sessions and extra lab practice time if they are successful on a test.

Action Plan: While two of the three measures used to assess SLO 1.1 were met, the faculty feel that there is still much room for improvement overall for this learning outcome. Performing quality radiographic procedures is one of the paramount skills of any radiologic science student, and based on the analysis of the 2017 assessment cycle results, several items will be implemented from the 2017 AY in hope of seeing more improvement in the 2018 AY.

For Measure A, frequent interaction between faculty and students will continue to be employed. It is believed that this interaction will reinforce to the student the importance of producing quality work. In addition to the typical student/faculty interaction, faculty will begin a “post conference” for students. This “post conference” will provide a mechanism for students to discuss their work and performance in before both faculty and peers. Constructive criticism can then be offered to help the student perform better in the clinical setting.

Measure B is an important indicator of how the student may perform in the clinical setting. To help increase the student performance (and meet this measure), faculty will implement multiple learning strategies: 1) the use of Learning Contracts, and 2) Peer-to-peer mentoring, 3) continue to offer “practice” labs, and 4) expand the use of virtual positioning software (Shaderware). The Learning Contracts will be used for students who are not successful on the first exam in the course. The contract will stipulate that the student attend a minimum number of tutoring sessions, as well as meet on a regular basis with the faculty in the course. The peer-to-peer mentoring sessions will utilize senior students to aid in the review of key radiologic science material with newer students. Extra “practice” labs will offer students additional opportunities to perform the procedures learned in the course. Finally, the increased use of virtual positioning software will provide opportunities for students to practice without the risks of radiation exposure.

Measure C is important in assessing the student’s ability to perform quality radiographic procedures after spending one semester in the clinical setting. There was a concerning drop in the number of students who successfully scored at the 85% benchmark.

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Considering the importance of this measure and its correlation with the student's ability to perform quality radiographic procedures, faculty decided upon several items to be added to the action plan. First, faculty added virtual lab assignments to improve students positioning skills. Faculty have added workbook quizzes to reinforce material taught in lecture and lab. Students are encouraged to review answers they missed for each test immediately after submitting the test and ask faculty if they are still unsure as to why they missed any questions before leaving test session. Faculty have added additional lab practice after lecture tests and before lab tests. Students are advised to go to free tutoring. Students are required to complete remediation with faculty for all tests that they are unsuccessful. Faculty will schedule a comprehensive review at end of semester before finals. Faculty will require the use of virtual radiographic positioning software. In addition, these second level students will also participate in the peer-to-peer mentoring sessions. Similar to the benefits first level students receive from this learning strategy, it is thought that students will continue to learn radiographic procedures through teaching others.

Decisions: It is important that radiologic science students be able to perform quality radiographic procedures. This SLO addresses this need through the use of three measures. While there was an increase in two of the three measures for this outcome, indicating that students are improving in their abilities to perform quality radiographic procedures, it is important that all three measures are consistently met. To address that goal, the following actions will be implemented in the 2018 AY:

- Faculty will frequently and consistently meet with students to keep students apprised of their clinical evaluations. These meetings will also serve to reinforce expected student behaviors with regard to the quality of work and the student's performance in the clinical setting.
- Begin a "post conference" for students, allowing the students an opportunity to regularly meet and debrief their clinical experiences. These "post conferences" will also allow the faculty an opportunity to critique student work and encourage students to perform at higher levels in their class and clinical settings.
- Increased usage of virtual positioning software. This software will be incorporated into the class as multiple assignments, encouraging students to virtually practice radiographic procedures without the need for radiation.
- Learning Contracts will be instituted for those students not performing well in the beginning of both courses. These contracts will require students to attend both tutoring sessions as well as frequent interaction with course faculty.
- Extra "practice" labs will continue to be utilized to provide additional opportunities for students learning to perform clinical procedures.
- Peer-to-peer mentoring sessions will be used. These sessions will benefit both JR and SR level students. JR level students will benefit from the review of radiographic procedure content, and the SR level students will benefit as they will be tasked with helping to present this information to the lower level students.

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SLO: 1.2 Students will develop assessment skills of a radiographer.

Findings:

**Measure A: RADS 3840 (Advanced Patient Care):
Comprehensive Final Exam**

2017: Unmet—only 69% of students achieved 85% or higher.
2016: Unmet—only 81% of students achieved 85% or higher.
2015: Unmet—only 86% of students achieved 85% or higher.
2014: Unmet—only 94% of students achieved 85% or higher.
2013: Unmet—only 97% of students achieved 85% or higher.

Measure B: RADS 3820 (Positioning 2): Trauma lab scenario

2017: Unmet—only 88% of students achieved 85% or higher.
2016: Unmet—only 91% of students achieved 85% or higher.
2015: Unmet—only 95% of students achieved 85% or higher.
2014: Unmet—only 97% of students achieved 85% or higher.
2013: Unmet—only 62% of students achieved 85% or higher.

Analysis: SLO: 1.2 Students will develop assessment skills of a radiographer.

This SLO is meant to determine the student's ability to assess a patient as if he/she were a practicing radiographer. This is part of the larger goal of ensuring students are clinical competent. Two measures are used to assess this outcome, and in 2017, neither measure was met.

Measure A: RADS 3840 (Advanced Patient Care): Comprehensive Final Exam: This measure is derived from the comprehensive final exam in the advanced patient care class and is used to evaluate the student's ability to assess a patient as if he/she were a practicing radiographer, which is an indicator of whether the student is becoming a clinically competent radiographer. In the 2016 AY, this measure was unmet, as only 81% of the students scored an 85 or higher on the final exam. Based on the analysis of the 2016 assessment cycle results, the faculty teaching that course felt that additional resources were needed to better explain the patient assessment material. These resources were added to the course. In addition, faculty added recorded lectures to address students with different learning styles.

When this measure was reassessed in 2017, however, the scores actually went down, as only 69% of the students scored an 85 or higher. One of the reasons for this precipitous drop was the final exam was proctored to comply with University standards. Further, it was noted that there was a five-year downward trend of percentage of students who achieved the 85% threshold. Based on the analysis of the 2017 assessment cycle results, the faculty felt that more drastic measures should be employed to

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ensure that students are gaining the knowledge necessary to adequately assess a patient, and thus become clinical competent radiographers. These are addressed in the action plan for this SLO.

Measure B: RADS 3820 (Positioning II): Trauma lab scenario: The trauma lab scenario for RADS 3820 requires that students perform a simulated assessment of a “trauma” patient. This assessment includes things such as the patient’s inability to move or breathe, as well as assessing pain levels. Students must quickly work through this assessment, and the lab scenario is a good indicator of the student’s mastery of patient assessment. In 2016 AY, this measure was unmet, as only 91% of the students scored at an 85 or higher on the lab exam. Based on the analysis of the 2016 assessment cycle results, faculty felt that certain learning strategies could be employed to help improve the scores and thus, student’s knowledge of patient assessment in the trauma setting. These learning strategies included extra practice labs and included additional trauma scenarios.

In the 2017 AY, this measure actually trended down and remained unmet. In 2017, the number of students who met the threshold of an 85 was 88%, but the mean actually increased from a 92 (2016) to a 93 (2017).

Action Plan: Neither of the two measures used to assess SLO 1.2 were met in 2017 AY. Based on the analysis of the 2017 assessment cycle results, faculty have implemented several new learning strategies to address the overall goal of the student becoming a clinically competent radiologic technologist.

For Measure A, the five-year downward trend necessitated significant changes. To begin, this course is being revised to include many more external links to aid the student in his/her study of patient assessment. In addition to the course revision, the textbook will also be updated. The new textbook will actually be an open resource material and is thought to be much more specific to the radiologic science profession. The current textbook was thought to be more oriented to a student majoring in nursing. The final exam will no longer be required. Instead, assignments will be used to better evaluate the student’s ability to assess patients. These assignments will be used to assess the students instead of the final exam previously used. This correlates with the overall goal of the program producing a clinically competent radiologic technologist.

Measure B aids in the overall goal of assessing a student’s ability to be a clinically competent radiologic technologist by evaluating the student in a simulated trauma setting. This SLO was not met in 2017. To increase the student’s ability and develop the assessment skills necessary to be a clinically competent radiologic technologist, faculty will add additional supplemental videos that demonstrate proper trauma assessment. Faculty will record the trauma practice labs so that students can do self-evaluation of their assessment and critical thinking skills.

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Decisions: For students to become clinically competent radiologic technologists, they must develop the assessment skills of a radiographer. This SLO evaluates this development using two measures. Neither of the two measures were met, so a series of actions will occur before the 2018 AY to ensure that students do develop the necessary assessment skills. These include:

- Course revision of RADS 3840 to include assessment skills specific to the radiologic science profession, rather than a more broad-based assessment curriculum.
- Use of an open resource textbook that is more specific to the radiologic science profession.
- Measurement of several assignments to assess the student's assessment ability, rather than one exam. It is thought that this is more of a true comprehensive evaluation of assessment skills.
- Include more supplemental videos depicting patient assessment in the trauma setting.
- Record and post videos of students as they participate in trauma practice labs. This will allow students to be able to critique themselves into their assessment abilities.

Summary of Goal 1: Students will be CLINICALLY COMPETENT radiologic technologists.

The first goal of the Bachelor of Science in Radiologic Science (BSRS) program is that students in the BSRS program will be clinically competent radiologic technologists. There are two SLOs that are used to evaluate this goal. First, students must be able to produce quality radiographic procedures. Two of the measures used to assess this SLO demonstrated that many of the students were not producing radiographic procedures. Based on the analysis of the 2017 assessment cycle results, several measures have been added to the various courses to reinforce the importance of this outcome and these measures will be reevaluated in 2018. It should be noted, however, that these two measures assess student abilities in the classroom. A third measure assesses the student's ability in the clinical setting. Based on the analysis of the 2017 assessment cycle results of the students' abilities in the clinical setting, all students were evaluated and found to be producing quality radiographic procedures.

The second SLO for this goal is that students will develop the assessment skills necessary to be a radiographer. Neither measure was met in 2017. Based on the analysis of the 2017 assessment cycle results, there were some positive findings, and there were also several areas to improve upon. First, the vast majority of students were able to properly assess students in a simulated trauma setting (RADS 3820-88% scored an 85 or higher). Faculty will work to reinforce trauma assessment in the attempt to give every student the ability to properly assess trauma patients. The other measure was not as encouraging, but there several areas for improvement. Primarily, it was felt that the existing course taught nursing assessment skills, which are different than the assessment skills needed by radiographers. To fix this issue, a course revision and new textbook will be used in 2018 to better address the assessment skills needed by radiographers.

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Goal 2: Students will demonstrate CRITICAL THINKING skills.								
Student Learning Outcomes	Tool	Benchmark	Results					
2.1 Students will evaluate a clinical situation and perform accordingly using critical thinking skills.	A. RADS 3820 (Positioning 2): Trauma lab scenario	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	43	26	36	30	29
			Met	38	22	35	29	18
			Mean	93	92	93	90	91
			Range	75-100	82-100	81-100	76-100	72-100
	%	88	91	95	97	62		
	B. RADS 4510 (Professional Imaging Practices): Clinical Scenario Assignment	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	24	33	31	24	26
			Mean	100	98	96	97.5	95.77
			Range	100	95-100	80-100	90-100	80-100
%			100	100	97	100	92	
2.2 Students will propose a plan to respond to imaging department scenarios.	A. RADS 4610 (Quality Management): QC project	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	24	32	32	24	26
			Met	23	23	28	19	24
			Mean	93.4	88.8	93.5	89.2	94
			Range	51-100	0-100	78-100	60-100	75-100
	%	96	72	88	79	92		
	B. ALHE 4630 (Healthcare Organization and Management): Mgmt. Case Study Project	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	32	31	24	22	31
			Met	31	31	24	22	31
			Mean	95	93	97	92	92.34
Range			42-100	88-100	93-100	88-100	86-100	
%	97	100	100	100	100			

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SLO: 2.1 Students will evaluate a clinical situation and perform accordingly using critical thinking skills.

Findings:

Measure A: RADS 3820 (Positioning 2): Trauma lab scenario

2017: Unmet—only 88% of students achieved 85% or higher.
2016: Unmet—only 91% of students achieved 85% or higher.
2015: Unmet—only 95% of students achieved 85% or higher.
2014: Unmet—only 97% of students achieved 85% or higher.
2013: Unmet—only 62% of students achieved 85% or higher.

Measure B: RADS 4510 (Professional Imaging Practices): Clinical Scenario Assignment

2017: Met—100% of students achieved 85% or higher.
2016: Met—100% of students achieved 85% or higher.
2015: Unmet—only 97% of students achieved 85% or higher.
2014: Met—100% of students achieved 85% or higher.
2013: Unmet—only 92% of students achieved 85% or higher.

Analysis: SLO 2.1: Students will evaluate a clinical situation and perform accordingly using critical thinking skills.

The second SLO is intended to assess the student's ability to evaluate a clinical situation and then respond using appropriate critical thinking skills. There are two measures that are used to assess this ability. One of the measures was met, while the other was not. Based on the analysis of the 2017 assessment cycle results, there are plans to continually improve the students' ability to use critical thinking skills in all courses, however; including these two measures.

Measure A: RADS 3820 (Positioning II): Trauma lab scenario: The trauma lab scenario for RADS 3820 requires that students perform a simulated assessment of a "trauma" patient. This assessment includes things such as the patient's inability to move or breathe, as well as assessing pain levels. Students must quickly work through this assessment, and the lab scenario is a good indicator of the student's mastery of patient assessment. In 2016 AY, this measure was unmet, as only 91% of the students scored at an 85 or higher on the lab exam. Based on the analysis of the 2016 assessment cycle results, faculty felt that certain

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learning strategies could be employed to help improve the scores and thus, student's knowledge of patient assessment in the trauma setting. These learning strategies included extra practice labs and included additional trauma scenarios.

In the 2017 AY, this measure actually trended down and remained unmet. In 2017, the number of students who met the threshold of an 85 was 88%, but an encouraging finding was that the mean actually increased slightly from a 92 (2016) to a 93 (2017).

Measure B: RADS 4510 (Professional Imaging Practices): Clinical Scenario Assignment: This assignment assesses the student's ability to use critical thinking skills in a variety of imaging scenarios. This measure was met in 2016. Based on the analysis of the 2016 assessment cycle results, despite the fact that this measure was met, the faculty at that time decided that the scenarios should be revised and expanded to include more variety to continue the pattern of continuous improvement. In 2017, this measure was again met, with 100% of the students scoring an 85 or higher. Based on the analysis of the 2017 assessment cycle results and despite this continued success, recognizing the importance of critical thinking in radiologic sciences, faculty sought ways to further improve this measure and thus, further increase student's abilities to critically think.

Action Plan: While one of the measures were met for this SLO, based on the analysis of the 2017 assessment cycle results, faculty felt that there was a need to ensure both measures were improved upon to foster an environment where critical thinking was the norm. To achieve this, several teaching strategies will be employed.

For Measure A, students are assessed on their abilities to critically think while simulating the radiographic imaging of a trauma patient. This SLO was not met in 2017. To increase the student's ability to critically think in the trauma clinical setting, faculty will add additional supplemental videos that demonstrate proper trauma assessment. Faculty will also record the trauma practice labs so that students can do self-evaluation of their assessment and critical thinking skills.

Measure B also assesses the student's ability to critically think in a variety of clinical settings. This measure has been met for the past two years, but this ability is important and needs to be continually improved upon. To achieve this, faculty will incorporate more clinical scenarios into the course. In addition, clinical scenarios have been added to the Quality Enhancement Plan (QEP), *Learning for Life*. As students take part in this QEP, they will be exposed to even more critical thinking scenarios. The QEP also requires students to further expand on their response to critical thinking scenarios through action/reflection pieces.

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SLO: 2.2 Students will propose a plan to respond to imaging department scenarios.

Measure A: RADS 4610 (Quality Management): QC project

2017: Unmet—only 96% of students achieved 85% or higher.
2016: Unmet—only 72% of students achieved 85% or higher.
2015: Unmet—only 88% of students achieved 85% or higher.
2014: Unmet—only 79% of students achieved 85% or higher.
2013: Unmet—only 92% of students achieved 85% or higher.

Measure B: ALHE 4630 (Healthcare Organization and Management): Mgmt. Case Study Project

2017: Unmet—only 97% of students achieved 85% or higher.
2016: Met—100% of students achieved 85% or higher.
2015: Met—100% of students achieved 85% or higher.
2014: Met—100% of students achieved 85% or higher.
2013: Met—100% of students achieved 85% or higher.

Analysis: SLO: 2.2 Students will propose a plan to respond to imaging department scenarios.

This SLO is meant to evaluate the student's ability to respond to various imaging department scenarios. This is part of the larger goal of developing critical thinking skills within radiologic science students. Neither of the two measures used to assess this SLO were met in 2017, but based on the analysis of the 2016 assessment cycle results and the resulting plans put in place, there was a positive change in Measure A for the 2017AY, and Measure B remained nearly met in 2017. Despite these findings, however, additional teaching strategies will be employed to effect more critical thinking skills in 2018.

Measure A: RADS 4610 (Quality Management): QC Project: This measure asks students to create a simulated quality management scenario in an imaging department. This measure helps to assess the overall goal of producing students with critical thinking abilities. This measure was unmet in 2016, however, with only 72% of the students scoring an 85 or higher on this assignment. Based on the analysis of the 2016 assessment cycle results, the faculty felt that the primary issue was a lack of clear and concise directions for the assignment. To effect positive change, faculty revised the instructions for this assignment to better explain what was expected. In 2017, this measure remained unmet, however there was an increase in the number of students who did score an 85 or higher (96% in 2017). The one student who did not meet the threshold submitted the

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assignment late. Based on the analysis of the 2017 assessment cycle results, it is believed that more detailed and clear expectations helped to increase this measure.

Measure B: ALHE 4630 (Healthcare Organization and Management): Mgmt. Case Study Project: There was a decline in meeting this benchmark this year. In the 2016 AY, 100% of the students scored an 85 or higher on this assignment. Based on the analysis of the 2016 assessment cycle results, faculty evaluated the tool itself and felt that it was a valid measure of the student's ability to respond to an imaging department scenario. In 2017, this measure was nearly met, with 97% of the students scoring an 85 or higher on this measure. The one student who scored below the threshold mark submitted the assignment late.

Action Plan: Critical thinking is an important skill needed by radiologic technologists. This SLO, which measures students' ability to respond to various imaging department scenarios, is an effective way of assessing whether the student possesses critical thinking skills. One of the measures for this SLO shows improvement from 2016, and the other shows that students are nearly achieving the goal. Based on the analysis of the 2017 assessment cycle results, however, and considering the critical nature of this SLO requires that faculty remain diligent in its assessment.

For Measure A, based on the analysis of the 2017 assessment cycle results, faculty will reevaluate and revise the project description as needed for the 2018 AY. In addition, frequent announcements and reminders will be made in the class as to the due dates of assignments in hopes of eliminating late submissions. The scope of QC has changed in Radiologic Sciences. Therefore, the course, and all assignments, were revised to reflect the changes made in the profession. Previously, the course focused on testing procedures for quality control. Now, the course will focus on how quality is measured in healthcare. Since this is an online course, faculty will post reminders in the course pertaining to due dates for assignments. Also, a forum will be added for student's questions regarding assignments.

For Measure B, based on the analysis of the 2017 assessment cycle results the same plan will take place. Faculty will reevaluate and revise the project description as needed. In addition, frequent announcements and reminders will be made in the class as to the due dates of assignments in hopes of eliminating late submissions. Since this is an online course, faculty will post reminders in the course pertaining to due dates for assignments. Also, a forum will be added for student's questions regarding assignments.

Decisions:

In terms of students' ability to critically think, there was evidence that the vast majority of students do possess critical thinking skills. Despite the encouraging findings from the various measures used to assess these outcomes, there are several strategies that will be used to further refine this needed skill.

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- Add supplemental videos in RADS 3820 that demonstrate trauma assessment.
- Record students as they perform trauma assessments. These videos will then be made available to the student for reflection and self-critique.
- Create more critical thinking scenarios in RADS 4510.
- Add critical thinking reflection, as part of the QEP process.
- Revise the assignment in ALHE 4610 (formerly RADS 4610) to reflect the changes in the content of the course.
- Revise the course layout in ALHE 4630 to include reminders for assignment due dates and a forum for student questions.

Summary of Goal 2: Students will demonstrate CRITICAL THINKING skills.

The second goal of the BSRS program is that students will demonstrate critical thinking skills. Again, two SLOs are used to assess this goal. The first SLO evaluates this goal through two measures. The first measure of this SLO demonstrated that most students were able to critically think using a simulation trauma scenario. While this was encouraging, based on the analysis of the 2017 assessment cycle results, faculty are already working on ways to further improve this measure through the use of trauma assessment videos that will supplement faculty lectures. Faculty will also record the practice assessments of students so that a self-critique can be performed by the student. The second measure for the first SLO demonstrated that every student was satisfactorily assessing patients using a simulated scenario. Despite this encouraging finding, based on the analysis of the 2017 assessment cycle results, faculty remain vigilant in helping students develop critical thinking skills. Faculty in this course are creating and revising the scenarios used to offer more variety. Additionally, faculty are using the reflection component of the BSRS Quality Enhancement Plan to further reinforce critical thinking skills.

The second SLO for this goal assesses the student's critical thinking skills in terms of working in an imaging department. Both measures for this SLO were nearly met, as only one student was not successful in each of the two measures. Further, the reason the two students did not successfully meet the benchmark was because of a late submission of the assignment. Overall, based on the analysis of the 2017 assessment cycle results, the faculty felt that the students were demonstrating appropriate critical thinking skills. Despite these encouraging findings, however, faculty are still working on ways to bolster the critical thinking skills of each student. For the first measure used for this SLO, faculty will be revising the QC project. The scope of QC has changed in Radiologic Sciences. Therefore, the course, and all assignments, were revised to reflect the changes made in the profession. For the second measure used for this SLO, since this is an online course, faculty will post reminders in the course pertaining to due dates for assignments. Also, a forum will be added for students' questions regarding assignments.

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Goal 3: Students will demonstrate an understanding of PROFESSIONALISM.								
Student Learning Outcomes	Tool	Benchmark	Results/Findings					
3.1 Students will demonstrate service to the profession and the community.	A. ALHE 3840 (Advanced Pt. Care): Service Learning Project	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	32	21	35	32	30
			Met	30	100	27	31	29
			Mean	99	99	96	96	96
			Range	80-100	90-100	0-100	80-100	65-100
			%	94	100	77	98	96
	B. RADS 4511 (Clinic 4): LSRT Participation Project RADS 3320 Reflection of Service Learning	100% of students will score 85 or higher		2017	2016	2015	2014	2013
			N	24	33	25	24	30
			Met	24	33	25	24	30
			Mean	100	100	100	100	100
			Range	100	100	100	100	100
			%	100	100	100	100	100
3.2 Students will integrate adherence to professional behaviors.	A. RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q2: Professional Behavior	100% of students will score an average of at least 4/5.					2017	2016
			N				24	33
			Met				24	33
			Mean				4.79	4.74
			Range				4-5	4.14-5.0
			%				100	100
	B. RADS 3911 (Clinic 3): Faculty Evaluation of Student Q2: Professional Behavior	100% of students will score an average of at least 4/5.					2017	2016
			N	19			32	24
			Met	18			100	100
			Mean	4.95			5	5
			Range	4-5			5	5
			%	95			100	100

Assessment Year: 2017

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SLO: 3.1 Students will demonstrate service to the profession and the community.

Findings:

Measure A: ALHE 3840 (Advanced Pt. Care): Service Learning Project

2017: Unmet—only 94% of students achieved 85 or higher.

2016: Met—100% of students achieved 85 or higher.

2015: Unmet—only 77% of students achieved 85 or higher.

2014: Unmet—only 98% achieved 85 or higher.

2013: Unmet—only 96% achieved 85 or higher.

Measure B: 3310 RADS 4511 (Clinic 4): LSRT Participation Project

2017: Met—100% of students achieved 85 or higher.

2016: Met—100% of students achieved 85 or higher.

2015: Met—100% of students achieved 85 or higher.

2014: Met—100% of students achieved 85 or higher.

2013: Met—100% of students achieved 85 or higher.

Analysis: SLO: 3.1 Students will demonstrate service to the profession and the community.

Professionalism is one of the most important components of any health science profession. Community service and professional service are both ways to assess the professional of an individual. The first SLO for this goal is that students will demonstrate service to the profession and the community and is measured in a variety of ways.

Measure A: ALHE 3840 (Advanced Pt. Care): Service Learning Project: One measure used to assess this SLO is a service learning project that is conducted as part of the ALHE 3840 Advanced Patient Care class. Students volunteer time at a community agency of their choice. At the conclusion of their service time, students report on their service through a narrated PowerPoint and a written paper. In 2016 AY, 100% of the students scored an 85 or higher on this assignment. Based on the analysis of the 2016 assessment cycle results, in an attempt create continuous improvement in this student outcome, faculty slightly revised the instructions based on student feedback. In 2017 AY, there was a slight drop in the percentage of students who scored an 85 or higher, with 94% of the students reaching that benchmark. It should be noted that the two students who did not meet that benchmark submitted their assignment late. As always, students who do not submit or submit late are going to negatively affect the results. Based on the analysis of the 2017 assessment cycle results, faculty will continue to encourage students to submit assignments in a timely manner. However, to demonstrate service to the profession and the community,

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students who do not submit should not be included in the data since there can be no evaluation of their communication skills. In future years, students not submitting will be excluded.

Measure B: 3310 RADS 4511 (Clinic 4): LSRT Participation Project: The second measure used to assess the students' service to profession and community came via their participation in the Louisiana Society of Radiologic Technologists (LSRT). This participation meant that students would take part in a scientific research project. Students would research a radiologic science project and present their research for their peers and radiologic science professionals at the annual LSRT Research Poster competition. In 2016 AY, this measure was met, as all students successfully presented their research. Based on the analysis of the 2016 assessment cycle results, however, and in an attempt to create continuous improvement in this student learning outcome, it was believed at that time that this measure did not completely capture the students' comprehension of their participation. Therefore, a reflection piece was added to this assignment for the 2017 AY. This requirement asked the student to reflect on his/her participation in the competition, as well as the professional meeting. In 2017 AY, 100% of the students successfully presented their research and completed a reflection on their participation in the LSRT meeting. However, in compliance with University directives, this measure will be discontinued for the 2018 AY. A new measure will be added.

Actions:

For Measure A, based on the analysis of the 2017 assessment cycle results, in an attempt create continuous improvement in this student outcome, faculty slightly revised the instructions based on student feedback. Additionally, instructions for the service learning project were revised for the 2018 AY. Finally, faculty will work with students through frequent emails and announcements to assure they are able to understand the expectations for the assignment.

For Measure B, based on the analysis of the 2017 assessment cycle results, this measure was found to be met. However, in compliance with University directives, attendance the annual conference is now voluntary, meaning that not all students will be completing the assignment used for this measure. Therefore, a new measure will be used in the 2018 AY. Faculty decided that the service learning reflection that occurs in RADS 3320 will be used. In this course, students go to one of several area nursing homes or long-term rehabilitation facilities to gain insight into working with patients. After this patient interaction experience, students then write a reflection paper on this experience. This new measure will begin in 2018 AY.

Decisions:

In terms of students' demonstrating service to the profession and the community, based on the analysis of the 2017 assessment cycle results, there was evidence that the vast majority of students did demonstrate service to the profession and the community. Evidence shows a decrease for the measures used to assess this SLO. However, much of the decrease is due to students not submitting or submitting late assignments, but there is still room for improvement. The following actions will be implemented:

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- Exclude students who do not submit assignments from data set to get an accurate assessment of service to the community and profession.
- Revise guidelines and rubric for ALHE 3840 Service Learning Project (measure A).
- Faculty to work with students to assure understanding of expectations for ALHE 3840 Service Learning Project: (measure A).
- Implement new measure (B), reflection of patient interaction experience.

SLO: 3.2 Students will integrate adherence to professional behaviors.

Findings:

Measure A: RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q2: Professional Behavior

2017: Met—100% of students achieved 4.0 or higher.
2016: Met—100% of students achieved 4.0 or higher.
2015: Data not available.
2014: Data not available.
2013: Data not available.

Measure B: RADS 3911 (Clinic 3): Faculty Evaluation of Student Q2: Professional Behavior

2017: Met—100% of students achieved 4.0 or higher.
2016: Met—100% of students achieved 4.0 or higher.
2015: Data not available.
2014: Data not available.
2013: Data not available.

Analysis: SLO: 3.2 Students will integrate adherence to professional behaviors.

Professionalism is one of the most important components of any health science profession. Adherence to professional behaviors is used to assess the professionalism of an individual. The first SLO for this goal is question two of the clinical instructor evaluation of the student. The clinical instructor at the clinical facility completes an evaluation on the student after every rotation. Typically, five evaluations are completed each semester. Question two concerns the professional behavior of the student on a five-point Likert scale. Students adherence to professional behaviors is measured in a variety of ways. The second SLO for this goal is question two of the same clinical evaluation of the student, however, this evaluation is performed by the faculty. The faculty members complete an evaluation of the student and meet with the student to discuss the results. The faculty meet with the students two times per semester to evaluate and discuss clinical performance. These meetings include a discussion of professional behaviors. Radiologic Technologists' are expected to adhere to professional behaviors as outlined in the Code of Ethics and Practice Standards.

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Measure A: RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q2: Professional Behavior. One measure used to assess this SLO is the adherence of professional behavior in senior level clinical students. The first SLO for this goal is question two of the clinical instructor evaluation of the student. Question two concerns the professional behavior of the student using a five-point Likert scale. The clinical instructor at the clinical facility completes an evaluation on the student after every rotation. Typically, five evaluations are completed each semester. Then, faculty review the evaluations with the students during the semester. Based on the analysis of the 2016 assessment cycle results, this measure was found to be met. In an attempt to foster continuous improvement in the development of professional behaviors, however, faculty continued to emphasize the adherence to the American Society of Radiologic Technologists (ASRT) and the American Registry of Radiologic Technologists (ARRT) Codes of Conduct in various lectures. It was found that this measure was again met in 2017 AY. Based on the analysis of the 2017 assessment cycle results, and in an attempt foster continuous improvement in the development of professional behaviors among students, faculty will continue to include portions of the ASRT and the ARRT Codes of Conduct in various lectures to hopefully achieve similar positive results in the 2018 AY. In addition, professional behavior has been incorporated into the Quality Enhancement Plan, *Learning for Life*. Several of the outcomes associated with the QEP describe professional behaviors, and these behaviors are discussed as part of the overall QEP.

Measure B: RADS 3911 (Clinic 3): Faculty Evaluation of Student Q2: Professional Behavior. The second measure for this SLO is question two of the same clinical evaluation of the student, however, this evaluation is performed by the faculty. Question two concerns the professional behavior of the student on a five-point Likert scale. The faculty members complete an evaluation of the student and meet with the student to discuss the results. The faculty meet with the students two times per semester to evaluate and discuss clinical performance. These meetings include a discussion of professional behaviors. In 2016, this measure was met. Based on the analysis of the 2016 assessment cycle results, and in an attempt foster continuous improvement in the development of professional behaviors among students, however, faculty felt that the emphasis of professional behaviors needed to continue. Faculty continued to emphasize the adherence to the American Society of Radiologic Technologists (ASRT) and the American Registry of Radiologic Technologists (ARRT) Codes of Conduct in various lectures. This measure was found to be met in 2017 AY. Based on the analysis of the 2017 assessment cycle results, and in an attempt foster continuous improvement in the development of professional behaviors among students, however, faculty felt that the emphasis of professional behaviors needed to continue. Faculty continued to emphasize the adherence to the American Society of Radiologic Technologists (ASRT) and the American Registry of Radiologic Technologists (ARRT) Codes of Conduct in various lectures.

Actions:

For measure A, this measure was met, with 100% of the students scoring a 77% or above on the clinical instructor evaluation of student's professional behavior. While this measure was met in the 2017 AY, it is important to consistently emphasize the

Assessment Year: 2017

importance of adherence of professional behaviors to prepare students for the profession. Based on the analysis of the 2017 assessment cycle results, and in an attempt foster continuous improvement in the development of professional behaviors among students, faculty felt that the emphasis of professional behaviors needed to continue. Faculty continued to emphasize the adherence to the American Society of Radiologic Technologists (ASRT) and the American Registry of Radiologic Technologists (ARRT) Codes of Conduct in various lectures. Because Radiologic Technologists' are expected to adhere to professional behaviors as outlined in the Code of Ethics and Practice Standards, students must adhere to professional behaviors. Faculty also reinforce professional behaviors through the reflection piece associated with the University QEP, *Learning for Life*.

For measure B, this measure was met, with 100% of the students scoring a 77% or above on the faculty evaluation of student's professional behavior. While this measure was met in the 2017 AY, it is important to consistently emphasize the importance of adherence of professional behaviors to prepare students for the profession. Based on the analysis of the 2017 assessment cycle results, and in an attempt foster continuous improvement in the development of professional behaviors among students, faculty felt that the emphasis of professional behaviors needed to continue. Faculty continued to emphasize the adherence to the American Society of Radiologic Technologists (ASRT) and the American Registry of Radiologic Technologists (ARRT) Codes of Conduct in various lectures. Because Radiologic Technologists' are expected to adhere to professional behaviors as outlined in the Code of Ethics and Practice Standards, students must adhere to professional behaviors. Faculty also reinforce professional behaviors through the reflection piece associated with the University QEP, *Learning for Life*.

Decisions:

In terms of students' adherence to professional behaviors, evidence shows students to adhere to professional behaviors. Even though this measure was met, faculty feel there is room for improvement. The following actions will be implemented:

- Remind clinical instructors, through a blast email, the importance of the adherence to the Code of Ethics.
- Remind clinical instructors, through a blast email, the importance of the adherence to the Practice Standards.
- Provide a copy of the Code of Ethics to students at the faculty evaluations.
- Provide a copy of the Practice Standards to the students at the faculty evaluations.
- Post the Code of Ethics in Moodle.
- Post the Practice Standards in Moodle.
- Incorporate Code of Ethics material in course lectures.
- Incorporate Practice Materials material in course lectures.

Assessment Year: 2017

Summary of Goal 3:

The third goal of the BSRS program is that students will demonstrate an understanding of professionalism. Again, two SLOs are used to assess this goal. The first SLO evaluates this goal through two measures. The first measure of this SLO demonstrated that a majority of students were able to successfully complete the service learning project. While this was encouraging, faculty are already working on ways to further improve this measure through the use of course adjustments. As always, students who do not submit or submit late are going to negatively affect the results. Faculty will continue to encourage students to submit assignments in a timely manner. However, to demonstrate service to the profession and the community, students who do not submit should not be included in the data since there can be no evaluation of their communication skills. In future years, students not submitting will be excluded. The second measure used to assess the students' service to profession and community came via their participation in the Louisiana Society of Radiologic Technologists (LSRT). This participation meant that students would take part in a scientific research project. Students would research a radiologic science project and present their research for their peers and radiologic science professionals at the annual LSRT Research Poster competition. Both measures for this SLO were nearly met, as only two students were not successful in one of the measures. Further, the reason the two students did not successfully meet the benchmark was because of a late submission of the assignment. Overall, the faculty felt that based on these SLO findings, the students were demonstrating service to the profession and the community. Despite these encouraging findings, however, faculty are still working on ways to bolster the professional behaviors of each student.

The second measure of this SLO is the integration of adherence to professional behaviors. For this SLO question two of the clinical evaluation of the student, is utilized for both measures. The first measure of this SLO demonstrated that all students adhere to professional behaviors in the clinical setting. While this was encouraging, faculty are already working on ways to further improve this measure through the use of an emphasis on the Code of Ethics and Practice Standards. Despite this encouraging finding, faculty remain vigilant in ensuring students adhere to professional behaviors as a future member of the radiologic sciences profession.

Goal 4: Students will demonstrate the ability to COMMUNICATE effectively.								
Student Learning Outcomes	Tool	Benchmark	Results/Findings					
4.1 Develop oral communication skills.	A. RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q4:	100% of students score an average of at least 4/5.					2017	2016
			N				24	33
			Met				23	32
			Mean				4.62	4.93
			Range				3.2-	3.86-

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	Communication with patients							5.0	5.0			
								96	97			
	B. RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q5: Communication with technologists	100% of students will score an average of at least 4/5.						2017	2016			
								24	33			
								24	33			
								4.66	4.86			
								4-5	4.0-5.0			
								100	100			
	C. RADS 4611 (Clinic 5): Faculty Eval of Student Q4: Communication with patients	100% of students will score an average of at least 4/5.						2017	2016			
								24	24			
								24	24			
								4.45	4.67			
								4.0-5.0	4.0-5.0			
								100	100			
	D. RADS 4611 (Clinic 5): Faculty Eval of Student Q5: Communication with technologists	100% of students will score an average of at least 4/5.						2017	2016			
								24	24			
								23	24			
								4.74	5			
								3-5	5.0			
								96	100			
4.2 Demonstrate written communication skills.	A. RADS 4510 (Professional Imaging Practices): Senior paper	100% of students will score at least 85.						2017	2016	2015	2014	2013
								24	33	30	24	24
								17	25	26	21	11
								90	91	90	98	83
								73-100	38-100	80-100	82-100	40-100
								71	88	85	88	45
	B. RADS 4530 (Radiation	100% of students will score at least 85.						2017	2016	2015	2014	

Assessment Year: 2017

	Protection): Brochure Assignment		N		24	35	24	25
			Met		23	34	24	23
			Mean		97	98	95	94
			Range		80- 100	80- 100	90- 100	83- 100
			%		96	97	100	92

Goal 4: Students will demonstrate the ability to communicate effectively.

SLO: 4.1 Students will develop oral communication skills.

Findings:

Measure A: RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q4: Communication with patients

2017: Unmet—only 96% of students achieved 4.0 or higher.
 2016: Unmet—only 97% of students achieved 4.0 or higher.
 2015: Data not available.
 2014: Data not available.
 2013: Data not available.

Measure C: RADS 4611 (Clinic 5): Faculty Evaluation of Student Q4: Communication with patients

2017: Met—100% of students achieved 4.0 or higher.
 2016: Met—100% of students achieved 4.0 or higher.
 2015: Data not available.
 2014: Data not available.
 2013: Data not available.

Measure B: RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q5: Communication with technologists

2017: Met—100% of students achieved 4.0 or higher.
 2016: Met—100% of students achieved 4.0 or higher.
 2015: Data not available.
 2014: Data not available.
 2013: Data not available.

Measure D: RADS 4611 (Clinic 5): Faculty Evaluation of Student Q5: Communication with technologists

2017: Unmet—only 96% of students achieved 4.0 or higher.
 2016: Met—100% of students achieved 4.0 or higher.
 2015: Data not available.
 2014: Data not available.
 2013: Data not available.

Assessment Year: 2017

Analysis:

SLO: 4.1 Students will develop oral communication skills.

SLO 4.1 assesses student oral communication skills. The measures used to assess the SLO include communication with patients and technologists—two skills that are essential in a clinical setting. There were mixed results for SLO 4.1 for the 2017 assessment cycle. Of the four measures for SLO 4.1, two measures remained the same and two measures had a slight decrease as compared to the 2016 assessment data. All four measures for SLO 4.1 were added to the assessment plan last year, therefore, there are only two years available for comparison. Last year, faculty continued to evaluate these tools and based on the analysis, faculty determined the instruments were effective.

Measure A: RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q4: Communication with patients: This measure is obtained from a clinical evaluation of students this is performed by clinical instructors who work with students in the clinical environment. The clinical instructors are able to observe student communication with patients. In 2016, this measure was unmet. Based on the analysis of the results from 2016, faculty evaluated the tool itself to ensure that it was accurately measuring the student's ability to communicate with the patient. The tool was found to be effective and it was determined that there was a need for some improvement regarding students' communication abilities with patients. Faculty endeavored to achieve this improvement through the emphasis of communication in the radiologic positioning and patient care course. In 2017, this measure was still unmet, with one student not meeting the benchmark. Based on the analysis of the results from 2017, faculty will continue to emphasize the importance of communication with patients through lectures in radiologic positioning and patient care courses.

Measure B: RADS 4611 (Clinic 5): Clinical Instructor Evaluation of Student Q5: Communication with technologists: This measure is acquired from the same evaluation of students performed by clinical instructors working with students in the clinical environment as in the previous measure. However, this measure evaluates student communication with technologists in the clinical environment. In 2016, this measure was met. Based on the analysis of the results from 2016, however, faculty wanted to continue this needed trend of improvement in communication through an emphasis on communicative abilities in various course lectures. This measure was again met in 2017 with 100% of students achieving the benchmark. However, the mean was slightly lower in 2017 than in the 2016 assessment cycle. Based on the analysis of the results from 2017, more communication lectures will be added to the curricula.

Measure C: RADS 4611 (Clinic 5): Faculty Evaluation of Student Q4: Communication with patients: This measure is attained from an evaluation conducted by program faculty regarding student performance in the clinical environment. The assessment is derived from faculty observations of students in the clinical environment and other technologists' observations of the student. The item on the assessment for this measure specifically evaluates student communication with patients. In 2016, this measure was met. Faculty endeavored to continue emphasizing the importance of communication in radiologic positioning and patient care course. For the second year, this measure was met with 100% of students achieving the benchmark, however

Assessment Year: 2017

the mean was slightly lower for 2017 than it was for the 2016 assessment cycle. During the past year, this tool was assessed and determined to be effective.

Measure D: RADS 4611 RADS 4611 (Clinic 5): Faculty Evaluation of Student Q5: Communication with technologists:

This measure is obtained from the same evaluation of students performed by faculty as the previous measure, but instead assesses students' communication with technologists. In 2016, this measure was met. Based on the analysis of the results from 2016, however, faculty wanted to continue this needed trend of improvement in communication through an emphasis on communicative abilities in various course lectures. There was a slight decrease in student performance on this measure in 2017, with one student not achieving the benchmark. Based on the analysis of the results from 2017, faculty felt that there was a need to refine student communication skills with technologists. Again, since this only the second year for this tool to be utilized in the assessment plan, the instrument was evaluated and concluded to be a good measure.

Action Plan: In comparing the results for SLO 4.1 from 2017 AY and 2016 AY, student oral communication skills are fairly similar. Since all of the measures for this SLO were new to the assessment plan last year, faculty evaluated the tools throughout the last year. The assessment revealed that the instruments were valid and reliable measures of student performance. Therefore, in the upcoming year, work needs to be done to help students improve their oral communication skills. Faculty feel strongly that by the time students are in the last clinical semesters of the program, their oral communication skills with technologists and patients need to strong. This is essential for good clinical practice upon graduation. Patient communication is evaluated with measures A and C. Results show one of these measures met the benchmark and the other had one student not achieve the benchmark. Additionally, there was a slight decrease in the mean score for both measures as compared to 2016. Faculty will be implementing an AIDET and communication workshop to help students with their communication skills with patients. AIDET is a communication framework for healthcare professionals to use with patients. The tools learned in this workshop will improve student communication with patients.

Communication with technologists is evaluated by measures B and D. Similar to the patient communication measures, results show that one of these measures met the benchmark and the other had one student not reach the benchmark. Again, there was a decrease in the mean score for both measures as compared to 2016. The AIDET and communication workshop will also include other communication strategies that students can use to improve their communication skills with technologists and other healthcare professionals. Therefore, oral communication with patients, technologists, and other healthcare professionals will improve.

Decisions:

In terms of students' ability to communicate orally, evidence shows a slight decrease for the measures used to assess this SLO. Faculty feel strongly that improvement is needed. The following actions will be implemented:

- Develop AIDET and communication workshop

Assessment Year: 2017

- Conduct AIDET and communication workshop

It is expected that these actions will improve students' ability to communicate orally.

SLO: 4.2 Students will develop written communication skills.

Findings:

Measure A: RADS 4510 (Professional Imaging Practices): Senior paper

2017: Unmet—only 71% of students achieved 85 or higher.

2016: Unmet—only 88% of students achieved 85 or higher.

2015: Unmet—only 85% of students achieved 85 or higher.

2014: Unmet—only 88% achieved 85 or higher.

2013: Unmet—only 45% achieved 85 or higher.

Measure B: RADS 4530 (Radiation Protection): Brochure Assignment

2017: Unmet—only 96% of students achieved 85 or higher.

2016: Unmet—only 97% of students achieved 85 or higher.

2015: Met—100% of students achieved 85 or higher.

2014: Unmet—only 92% achieved 85 or higher.

2013: Data not available.

Analysis:

SLO: 4.2 Students will develop written communication skills.

SLO 4.2 assesses student written communication skills. The measures used to assess the SLO include a research paper and a patient brochure regarding radiation protection. The research paper is used to evaluate formal writing skills whereas, the brochure assesses writing technical information that is understandable by the public. There were mixed results for SLO 4.2 for the 2017 assessment cycle. Of the two measures for SLO 4.2, one was met, and one was unmet. Based on the analysis of the results from 2016, faculty implemented an electronic resource for APA format to help improve student results for measure A. However, very few students used this resource. Also, faculty began to advise students to take a special section of ENGL 2110 that was designed for nursing and allied health students. This section uses APA format in place of MLA to help students begin to learn to use this format correctly. However, it will take several years before students who took the special section of ENGL 2110 will be enrolled in RADS 4510. Therefore, faculty plan to implement a more active plan in the 2018 AY in order to get students more engaged in improving their writing.

Measure A: RADS 4510 (Professional Imaging Practices): Senior paper: This measure assesses student formal writing skills. For the past 5 years, this measure has not met the benchmark. In 2016, this measure was unmet. Based on the analysis of the results from 2016, faculty added an electronic resource to help students with APA format and improve their scores. However, very few students used the resource and this measure remained unmet in 2017. Based on the analysis of the results

Assessment Year: 2017

from 2017, faculty will implement a more active plan to improve student writing in 2018 and beyond. First, the course will be revised to require a submission of a draft of the paper. Faculty will provide feedback on the draft to help students identify errors and make corrections prior to final submission. Additionally, there will be a lecture presented on APA format to provide students with instruction on properly using this format.

Advising students to take the special section of ENGL 2110 incorporates APA format for allied health and nursing students will continue. This practice should show results in coming years.

Measure B: RADS 4530 (Radiation Protection): Brochure Assignment: This measure assesses the student's ability to relate technical information in way that is easily understandable to patients and the public. Students create a brochure on a radiation protection topic to be distributed to patients. For 2016 AY, this measure was not met. Based on the analysis of the results from 2016, faculty felt that the primary reason for not meeting this measure was the student not submitting the assignment on time. However, faculty also chose to evaluate the project itself to ensure that it was truly measuring the student's ability to communicate through writing. In 2017, this result remained the same, with one student not meeting the goal. Again, this student did not submit the assignment on time. It was found in 2017 that the assignment accurately measured written communication ability, however. Faculty will reevaluate the project description as needed. In addition, frequent announcements and reminders will be made in the class as to the due dates of assignments in hopes of eliminating late submissions. Since this is a hybrid course, faculty will post reminders in the course pertaining to due dates for assignments. Also, a forum will be added for students' questions regarding assignments.

Action Plan: This year (2017 assessment cycle), there was a slight improvement over last year's result. One measure was met and another unmet. Faculty have tried numerous methods in the past to attempt to improve student writing skills. Most of these approaches have involved adding tutorials or other electronic resources for students to use. However, it is clear that students are not using the tools they have been provided. Based on the analysis of the results from 2017, faculty have developed a more active procedure to increase student engagement in improving their writing skills. First, faculty will continue to advise students to enroll in the special section ENGL 2110 that incorporates APA format. In upcoming years, students will enter the program more prepared and with better writing and APA skills. Next, faculty will revise RADS 4530 to incorporate a draft paper submission. Students will receive feedback and have the opportunity to learn from and correct their mistakes. Finally, faculty will provide classroom instruction on proper APA format. All of these efforts will improve student writing.

Assessment Year: 2017

Decisions:

In terms of students' ability to communicate in writing, evidence shows an increase for one measure (measure B) and a decrease for the other measures (measure A) used to assess this SLO. Faculty will implement an active plan to improve this outcome. Based on the analysis of all results from 2017, the following actions will be implemented:

- Continue to advise students to enroll in the section of ENGL 2110 designed for allied health and nursing students
- Revise RADS 4510 to incorporate a draft research paper to provide students feedback.
- Provide classroom instruction related to APA format.

It is expected that these actions will improve students' ability to communicate in a written format.

Summary: Goal 4: Students will demonstrate the ability to communicate effectively.

Goal 4 evaluates students' ability to communicate effectively and uses two SLOs to assess the goal. SLO 4.1 evaluates oral communication and SLO 4.2 assesses written communication. Results for 2017 AY show the need for continued improvement is needed for both SLOs. For SLO 4.1 oral communication, the tools used last year were new and needed further evaluation. Therefore, faculty assessed the instruments used to evaluate student oral communication and determined the tools were reliable and valid. For SLO 4.2 written communication, the actions that faculty took for improvement did not have the intended outcomes. Moving forward, an active plan to improve student engagement in improving their writing will be implemented.

The 2017 assessment results show that the vast majority of students are able to orally communicate—with patients and technologists. This is essential for good clinical practice. However, there is still room for improvement and faculty have developed a plan for an AIDET and communication workshop to advance student oral communication skills. For written communication, the assessment results were more discouraging showing that 29% of students failed to achieve the benchmark for one of the measures. Faculty have implemented strategies in the past to improve student written communication and these strategies have not had the intended results. However, faculty feel confident that the active plan that was developed this year will show improvement in student written communication skills. Providing feedback on draft research papers and classroom instruction on APA format will engage students in advancing their written communication skills.

Assessment Year: 2017

Comprehensive Summary of Key Evidence of Improvements Based on Analysis of Results

As always, continuous improvement is a focus for the program. With the focus of continuous improvement there have been numerous changes that have been implemented throughout the program in an attempt to positively affect student learning. Most of these changes were brought about through the assessment process. Below is the summary of changes that have occurred during the 2017 AY related to the student learning outcomes for the BSRS program.

The first goal of the BSRS program is that students will become competent radiologic technologists. To help achieve this goal, several changes will be made to both of the SLOs.

- SLO 1.1: Students will perform quality radiographic procedures.
 - Faculty will frequently and consistently meet with students to keep students apprised of their clinical evaluations.
 - Begin a “post conference” for students.
 - Increased usage of virtual positioning software.
 - Implementation of learning contracts will be instituted for those students not performing well.
 - Extra “practice” labs for students learning to perform clinical procedures.
 - Peer-to-peer mentoring sessions will be used.
- SLO 1.2: Students will develop assessment skills of a radiographer.
 - Course revision of RADS 3840, including use of an open resource textbook.
 - Measurement of several assignments to assess the student’s assessment ability, rather than one exam.
 - Include more supplemental videos depicting patient assessment in the trauma setting.
 - Record and post videos of students as they participate in trauma practice labs.

The second goal of the BSRS program is that students will demonstrate critical thinking skills. Based on the analysis of the 2017 AY results, several changes will be made to the two SLOs.

- SLO 2.1: Students will evaluate a clinical situation and perform accordingly using critical thinking skills.
 - Add additional supplemental videos that demonstrate proper trauma assessment.
 - Record the trauma practice labs so that students can do self-evaluation of their assessment and critical thinking skills.

Assessment Year: 2017

- Incorporate more clinical scenarios into the course.
- Clinical scenarios have been added to the Quality Enhancement Plan (QEP), Learning for Life.
- SLO 2.2: Students will propose a plan to respond to imaging department scenarios.
 - Add supplemental videos in RADS 3820 that demonstrate trauma assessment.
 - Record students as they perform trauma assessments.
 - Create more critical thinking scenarios in RADS 4510.
 - Add critical thinking reflection, as part of the QEP process.
 - Revise the assignment in ALHE 4610 (formerly RADS 4610).
 - Revise the course layout in ALHE 4630.

The third goal of the BSRS program is that students will demonstrate an understanding of professionalism. Based on the 2017 AY results, several changes will be made to the two SLOs.

- SLO: 3.1: Students will demonstrate service to the profession and the community.
 - Exclude students who do not submit assignments from data set.
 - Revise guidelines and rubric for ALHE 3840 Service Learning Project (measure A).
 - Faculty to work with students to assure understanding of expectations for ALHE 3840 Service Learning Project.
 - Implement new measure (B), reflection of patient interaction experience.
- SLO: 3.2: Students will integrate adherence to professional behaviors.
 - Remind clinical instructors, through a blast email, the importance of the adherence to the Code of Ethics.
 - Remind clinical instructors, through a blast email, the importance of the adherence to the Practice Standards.
 - Provide a copy of the Code of Ethics to students at the faculty evaluations.
 - Provide a copy of the Practice Standards at the faculty evaluations.
 - Post the Code of Ethics in Moodle.
 - Post the Practice Standards in Moodle.

The fourth goal of the BSRS program is that students will effectively communicate with others. Based on the 2017 AY results, several changes will be made to the four SLOs.

- SLO: 4.1: Students will develop oral communication skills.
 - Develop AIDET and communication workshop

Assessment Year: 2017

- Conduct AIDET and communication workshop
- SLO: 4.2: Students will develop written communication skills.
 - Continue to advise students to enroll in the section of ENGL 2110 designed for allied health and nursing students
 - Revise RADS 4510 to incorporate a draft research paper to provide students feedback.
 - Provide classroom instruction related to APA format.

Plan of Action Moving Forward

Based on the evidence provided from the 2017 AY, the BSRS program will make the following changes for continuous program improvement:

Goal 1: Students will be clinical competent radiologic technologists.

- SLO 1.1: Students will perform quality radiographic procedures.
 - Faculty will meet with students consistently to keep students apprised of their clinical evaluations.
 - Begin a formal “post conference” for students.
 - Increased usage of virtual positioning software.
 - Implementation of learning contracts in core classes.
 - Extra “practice” labs for students learning to perform clinical procedures.
 - Peer-to-peer mentoring sessions will be implemented. These sessions will be guided by faculty.
- SLO 1.2: Students will develop assessment skills of a radiographer.
 - Course revision of RADS 3840, including use of an open resource textbook.
 - Include more supplemental videos depicting patient assessment in the trauma setting.
 - Record and post videos of students as they participate in trauma practice labs.

Goal 2: Students will demonstrate critical thinking skills.

- SLO 2.1: Students will evaluate a clinical situation and perform accordingly using critical thinking skills.
 - Add additional supplemental videos that demonstrate proper trauma assessment.
 - Record the trauma practice labs so students can do reflect on their assessment and critical thinking skills.
 - Clinical scenarios have been added to the Quality Enhancement Plan (QEP), Learning for Life.
- SLO 2.2: Students will propose a plan to respond to imaging department scenarios.
 - Supplemental videos will be added in RADS 3820 that demonstrate trauma assessment.
 - Record students as they perform trauma assessments.

Assessment Year: 2017

- Create additional critical thinking scenarios in RADS 4510.
- Add critical thinking reflection, as part of the QEP process.
- Revise assignment in ALHE 4610 (formerly RADS 4610).
- Revise course layout in ALHE 4630.

Goal 3: Students will demonstrate an understanding of professionalism.

- SLO: 3.1: Students will demonstrate service to the profession and the community.
 - Exclude students who do not submit assignments from data set.
 - Revise guidelines and rubric for ALHE 3840 Service Learning Project (measure A).
 - Implement new measure (B), reflection of patient interaction experience.
- SLO: 3.2: Students will integrate adherence to professional behaviors.
 - Remind clinical instructors, through a blast email, the importance of the adherence to the Code of Ethics and the Practice Standards.
 - Provide a copy of the Code of Ethics and Practice Standards to students at the faculty evaluations.
 - Post the Code of Ethics and Practice Standards in Moodle.

Goal 4: Students will demonstrate the ability to communicate effectively.

- SLO: 4.1: Students will develop oral communication skills.
 - Develop and conduct AIDET and communication workshop.
- SLO: 4.2: Students will develop written communication skills.
 - Continue to advise students to enroll in the section of ENGL 2110, designed for allied health students.
 - Revise RADS 4510 to incorporate a draft research paper to provide feedback for students.
 - Provide classroom instruction related to APA format.