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## Radiologic Sciences [RADS]

### **Cycles included in this report:**

Jun 1, 2022 to May 31, 2023

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## **Program Name: Radiologic Sciences [RADS]**

**Reporting Cycle: Jun 1, 2022 to May 31, 2023**

### **1 Is this program offered via Distance Learning?**

100% Traditional or less than 50% Distance/Traditional

### **2 Is this program offered at an off-site location?**

No

### **2.1 If yes to previous, provide addresses for each location where 50% or more of program credits may be earned.**

### **3 Example of Program Improvement**



**2018-2019:**

The RADS program has a goal to foster critical thinking skills enabling effective problem-solving in the professional environment. One of the outcomes/objectives for this goal is *"Students produce radiographic images demonstrating proper selection of exposure and technical factors"*. One of the assessment tools used to evaluate this item is embedded test questions in RADS 461, the desired benchmark is 80 % of the student will answer each embedded question correctly. This is the third year the assessment tool was used, in 2016 - 85% of the students in the cohort answered the questions correctly. In 2017 - the benchmark was not met with only 75.3 % of the students answering the questions correctly. As a result of not meeting the benchmark, a voice overlay power point presentation was developed regarding radiographic exposure and selection of technical factors and assigned as extra responsibility of the student during the Spring 2018. In 2018 the benchmark was still not met, however, the score did increase to 78.4% of the student answering the embedded questions correctly. While the benchmark was not met for a second straight year, there was an increase in the positive direction.

**2019-2020:**

The RADS program has as one of its objectives/outcomes that students be able to apply the principles of radiation protection for the patient, self, and others. The tool used to assess the accomplishment of this outcome is the Performance Evaluation (Form f-9), section III, A-D completed during RADS 356. The benchmark is an average score of 3 with a possibility of 4 points from the sample selected. In 2019, the results for section III A-D on Form F-9 were a perfect score of 4 points, up from 2018.

**2020-2021:**

During the 2020 - 2021 academic year, the RADS program along with other academic programs went into a survival mode and directed all efforts on maintaining adequate clinical assignments and proper didactic course delivery. While on the 2020 assessment plan the action was most continue to monitor, again trying to survive. There were still areas of the assessment plan that demonstrated improvement. One such area was on objective 1.2, using the same test tool with the main difference was the course delivery method. In 2021 the delivery went back to face-to-face delivery and there was a 3 point increase on this particular test. Just bring the issue back home for a hands-on Profession like RADS that face to face is so important.

**2021-2022:**

During the 2021 - 2022 academic year, the RADS program specifically in the professional phase of the program noticed a decline in knowledge from RADS foundation courses. The program faculty and officials contributed this decline in knowledge to the interruptions in the delivery of the course materials from COVID-19 and the multiple natural disasters that plagued the Lake Charles area. While on the 2021 assessment plan, the action was mostly continued to monitor or trend, one area where the benchmark was not met was a selection of proper exposure factors. To enhance the area of proper exposure factor selection, the University Faculty met the Clinical Preceptors at the Clinical Settings to establish exercises to reinforce the discussion of the proper selection of exposure factors. During the RADS 465 course which is the capstone course there were also daily quizzes implemented to discuss proper exposure factor selection. There was an increase in answering questions of mock certification exams administered during RADS 465 in the area of exposure factor selection. The results of the national certification examination for this cohort of students (class of 2022) in the area of exposure factor selection will be more documentation.

**2022-2023:**

- SLO 1.3 evaluates the student's ability to apply the principles of radiation protection. One of the tools used to measure this was the average grade on RADS 349 test 2. In the Fall of 2022, the faculty decided to change the textbook for the course, which we believe contributed to an increase in the average score by 2.8%.
- The national first-time passage rate on the certification examination for the 2023 cohort of students will be evaluated to see if the purchase of the Cloverlearning boot camp platform increases the first-time passage rate. The program had planned to review the results of the national certification examination in the area of exposure factor selection; however, because of the poor results of the first-time passage rate, the results would be skewed.

#### 4 Program Highlights from the Reporting Year

2018-2019:

- Four RADS faculty members and 21 RADS students attended the 61st annual meeting of the Louisiana Society of Radiologic Technologists in Baton Rouge. While there two faculty members were elected to officer positions: Allison Puente 1st Vice President, and Sarah Jessup 2nd Vice president of the LSRT.
- Three RADS faculty members and 14 RADS students attended an international meeting in Chicago of the Radiologic Society of North America. This meeting had
  - 50,252 meeting attendees
  - 24,702 professional attendees
  - 115 countries represented
  - 76% of attendees come to RSNA to see new products and development
- Three RADS faculty members and 4 RADS students attended the Mid-Winter Seminar of the Louisiana Society of Radiologic Technologists
- Three RADS faculty members were appointed by the national accrediting agency for Radiologic Sciences as site visitors.
- Two RADS faculty members hold executive board appointments from the Louisiana Society of Radiologic Technologists: Greg Bradley - Director of Publications and Susie Beasley - Historian

2019-2020:

The RADS program had a community service project for Valentine's Day to give food from the heart. It was a campus-wide food drive and at the Clinical Education sites, and the event was very successful. Enough food was collected to share with 4 different community food banks in the Lake Charles area. All the program faculty and 22 students attend the Mid-Winter Seminar of the Louisiana Society of Radiologic Technologists (LSRT). Two students placed first and third place respectively in the 2019 LSRT Student Scientific Essay Competition.

2020-2021:

During this past year, the program had several graduates elevated to administrative positions or recognized nationally.

- Kevin Clark - Named by the American Society of Radiologic Technologists as Researcher and Writer of the Year.
- Jared Fontenot - Appointed as Director of Radiology at Savoy Medical Center in Mamou
- Glenn Dailey - Appointed CEO of Ochsner St. Martin Hospital in Breau Bridge

2021-2022:

Four faculty members and 30 students attended the Louisiana Society of Radiologic Technologists (LSRT) Annual Meeting, in July of 2021, in New Orleans. At this meeting a quiz bowl team from MSU's Radiologic Sciences Program Coached by Susie Beasley came in 2nd place in a statewide competition. Another student came in third place for her scientific essay in a statewide competition. Allison Puente, a faculty member was installed as President-Elect of the LSRT. A graduate of the program Dr. Laura Aaron was elevated to Life Member of LSRT, which is the highest honor of the organization, the presentation was made by MSU Department Head of Radiologic and Medical Laboratory Sciences, Greg Bradley.

The RADS faculty planned activities involving all the students in the processional phase of the program for National Radiologic Technology Week.

The MSU Radiologic Sciences Seniors participated in an Anatomage tournament. The MSU team came in First Place, and was coached by two MSU faculty member Allison Puente and Monica Weber.

2022-2023:

During this year with the opening of many more education meetings in the face-to-face format, the faculty and students have been able to attend some beneficial meetings. Those meetings include:

- In June of 2022, 17 students and 4 faculty attended the American Society of Radiologic Technologists (ASRT) Symposium and House of Delegates in Orlando, Florida. Allison Puente an Assistant Professor for the RADS program served as one of two delegates for the state of Louisiana at the ASRT House of Delegates. Greg Bradley and Allison Puente both faculty members for the RADS program were part of a group from Louisiana who were recognized for receiving an award from the National organization for the best Advocacy affiliate in the nation. Dr. Kevin Clark a 2000 graduate from the McNeese RADS program was one of two ASRT members elevated to the status of fellow by the ASRT. During the fellows' presentation, McNeese State University was written on the opening slide along with the MSU composite picture of Dr. Clark's graduating class in the background during his presentation. Presenting Dr. Clark with his ASRT Fellow medallion was another McNeese RADS program graduate from the class of 1991 Dr. Laura Aaron. Dr. Aaron mentioned the excellent RADS program faculty who not only educate their graduates to obtain nothing but excellent medical images for proper diagnosis of patients. Dr. Aaron stated further stated that the McNeese faculty also instill things such as professionalism, advocacy, and excellent patient care in their graduates and stated that Dr. Clark shared stories with her about two retired faculty and two current MSU RADS faculty of which she stated by name during the presentation. The McNeese program had more students attend this meeting than any other RADS program in the nation.
- In July of 2022, students and faculty attended the Louisiana Society of Radiologic Technologists meeting held in Baton Rouge. At the meeting, Allison Puente an assistant professor in the Radiologic sciences program was installed as President of the statewide organization. Monica Weber another faculty member was installed as the recording secretary, while two other faculty members were appointed to positions within the organization. Greg Bradley was appointed as the Director of Publications for the organization, and Susie Beasley was appointed to serve as Historian for the Louisiana Society of Radiologic Technologists. The Radiologic Sciences program had a quiz bowl team that competed against the other programs within the state. The MSU team finished 4th place in the quiz bowl competition. Miranda Haugen a junior student in the RADS program was elected to serve as the Southwestern Louisiana Student Representative on the LSRT Student Council. Shikha Sharma a senior student won first place in the LSRT Scientific Essay competition for students, and Peter Sheppard another junior student came in 3 place in the same competition.
- In November of 2022, 20 Students and 6 faculty members attended the Radiologic Society of North America (RSNA) an international meeting that was held in Chicago. The RSNA meeting had educational presentations, as well as the international unveiling of the last Medical Imaging equipment, as supplemental equipment. The RSNA reported more than 38,000 in attendance for this meeting. While in Chicago the faculty and students visited the International Museum of Surgical Procedures, which devotes an entire floor to medical imaging.
- In March of 2023, 11 students and 5 faculty members attended the Louisiana Society of Radiologic Technologists (LSRT) midwinter seminar held in Alexandria, Louisiana. During this event, 5 MSU RADS faculty members were actively involved in the Seminar. Ms. Susie Beasley served as Moderator for the 2023 Student Bee Competition, Mr. Greg Bradley served as a judge for the Student Bee Competition, Ms. Allison Puente and Ms. Monica Weber presented a lecture on their research about radiation exposure, and Ms. Caitlan Clark served as the meeting planner for the entire event.

## 5 Program Mission

The Bachelor of Science in Radiologic Sciences program prepares students for the health care profession as competent radiographers. In addition, the program prepares students for career opportunities in mammography, computed tomography, magnetic resonance imaging, bone densitometry, vascular intervention, quality management, and departmental management. The program integrates learning and clinical environments to promote advanced professional development.

The program goals are:

1. To provide an education that promotes clinical competency.
  - SLO - 1.1 Students will be able to demonstrate radiographic positioning skills accurately.
  - SLO - 1.2 Students will provide patient care and comfort to patients while performing radiographic procedures.
  - SLO - 1.3 Students will be able to apply the principles of radiation protection for the patient, self and others.
2. To foster critical thinking skills enabling effective problem solving in the professional environment.
  - SLO - 2.1 Students produce radiographic images demonstrating proper selection of exposure and technical factors.
  - SLO - 2.2 Students will evaluate finished radiographic images, for proper: anatomy visualized, positioning, and exposure factors.
3. Apply effective communication skills in the professional environment.
  - SLO - 3.1 Students will be able to communicate with their patients while implementing the radiography process.
  - SLO - 3.2 Students will be able to communicate effectively with clinical staff and peers.
4. To promote professionalism in radiologic sciences.
  - SLO - 4.1 The student will maintain appropriate conversation with and in the presence of patients.
  - SLO - 4.2 The student will demonstrate professional ethics while at the assigned Clinical Education Setting.

## 6 Institutional Mission Reference RADS program mission reference

The program mission aligns with the University mission to emphasize in-depth disciplinary knowledge and its application to academic and professional environments. Students achieve success through the studied acquisition of content knowledge, the demonstration of discipline-specific skills and dispositions as well as mastery of general education competencies such as critical thinking, effective communication, and independent learning.

## 7 Assessment and Benchmark SLO 1.2 - F-9 II A-E RADS 356, and RADS 220L Exam I Average

Assessment: Students will provide patient care and comfort to patients while performing radiographic procedures. RADS 220L examination I average grade.

Assessment Instruments:

1. RADS 356 F-9 II A-E
2. RADS 220L examination I average grade

Benchmark 1: An average score of 3 with a possible score of 4 for II A-E of Form F-9 for the sample selected.

Prior to 2016-2017, the benchmark was an average score of 2 (demonstrate acceptable with minor improvements) or higher on II B on F-10.

Benchmark 2: An average score of 85 (100 points possible) or higher on examination I for RADS 220L.

*Files: See list of attachments to view. (Requires Adobe Reader or compatible viewer).*

Completion Rates

### Outcome Links

#### Patient Care [Program]

Students will provide patient care and comfort to patients while performing radiographic procedures

## 7.1 Data

Academic Year	# of students	Patient Care F-9 average score for II A-E
2017-2018	—	3.93
2018-2019	24	3.97
2019-2020	21	3.94
2020-2021	22	3.92
2021-2022	22	3.92
2022-2023	19	3.96

Academic year	# of Students in RADS 467	RADS 467, F-26 item 6 (80% will receive a 9 or higher)
2023-2024	19	94.7%

### Outcome Links

#### Radiographic Positioning [Program]

Students will be able to demonstrate radiographic positioning skills accurately.

#### 7.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

Analysis for this benchmark was the score on all items for 2018 is 3.97. It is up from a 3.93 average in 2017. The established benchmark was met. Will continue to trend, as this is third year (beginning in 2016) and typically trend for 4 – 5 years before changing.

2019-2020:

Analysis for this benchmark was the score on all time for 2019 is slightly down from 2018, will trend for one more year to make sure it is not trending downward.

2020-2021:

The benchmark was met, however it was a slight decline from 3.4 in 2020. but consider changing the tool.

2021-2022:

The benchmark was met. However, this item had been trending for several years now and should have been changed. It will be considered for a change in the instrument at the first faculty meeting in the Fall of 2022.

2022-2023:

The benchmark was met, demonstrating that students provided good patient care and comfort to patients while performing radiographic procedures. However in moving forward SLO 1.2 will be evaluated by RADS 467, Form F-26, item 6, and The RADS 320L test 1 patient care section.

## 7.2 Data

Academic Year	Average grade on test II for RADS 320L	# of RADS 320L students	# of RADS 220L students	Average grade on examination I
2017-2018	—	—	23	91.40%
2018-2019	—	—	24	91.8%
2019-2020	—	—	24	88%
2020-2021	—	—	24	91.76%
2021-2022	—	—	24	91.1%
2022-2023	91.01	19	27	90.32%

Academic year	# of students in RADS 320L	RADS 320L, test 1, patient Care Section (benchmark average score of 85)
2023-2024	21	92.5

### 7.2.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

Continue to trend, currently demonstrating an increasing score from 87.35% in 2015 to 91.8% in 2018.

2019-2020:

Continue to trend, it is currently demonstrating an average score on the downward trend from 91.8 to 88%.

2020-2021:

Improvement was demonstrated with the average score going from 88% to 91.7%. The benchmark was met for both areas assessing objective 1.2. This is the fifth year for using both of these instruments to measure objective 1.2, therefore will continue to change the instruments used to evaluate this objective, in the next faculty advisory meeting in June of 2021.

2021-2022:

For 2022, The average grade for the cohort of students is 91.1%. The plan was to change the instrument used to evaluate this objective in 2021; however, since the program and the university were in survival mode over the past 1 1/2 years, that did not happen. Selecting a new item to evaluate this objective has been placed on the agenda for the August 2022 faculty agenda.

2022-2023:

For 2023, the average grade for the cohort of students is 90.32% on RADS 220L test I. The instrument was changed in 2023 to use data from RADS 320L exam II; the average on this test was 91.01%. Both instruments demonstrated that students provide patient care and comfort to patients while performing radiographic procedures.

2023-2024;

For 2023-24 the average grade on RADS 320L, test 1, Patient care section was 92.5%. The benchmark was met, this is the first year using this actual tool for evaluation.

**8 Assessment and Benchmark SLO 1.1 - RADS 321L Final test, and F-10 II C RADS 461**

Assessment: Students will be able to demonstrate radiographic positioning skills accurately.

Assessment Instruments:

1. RADS 321L Final examination (positioning portion only).
2. Performance Evaluation (Form F-10)–Item II C, completed during RADS 461 (random sampling of 3 per student)

Benchmark 1: An average score of 70 (100 points possible) or higher on the positioning portion of the final examination for RADS 321L.

Prior to 2017-2018, the benchmark was an average score of 80 (100 points possible) on the final examination.

***During the 2018-2019 academic the test format changed, to be out of 100 points***

Benchmark 2: An average score of 2 (demonstrate acceptable with minor improvements) or higher on II C of Form F-10 for the sample selected.

#### Outcome Links

#### Radiographic Positioning [Program]

Students will be able to demonstrate radiographic positioning skills accurately.

### 8.1 Data

Academic Year	# of students	Average points on positioning portion of final examination
2017-2018	19	77.1/80
2018-2019	22	97/100
2019-2020	21	97/100
2020-2021	22	67.67/70 96.67/100
2021-2022	22	97.14/100
2022-2023	19	98.13/100

### 8.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

This is the third year of using this assessment tool. The established benchmark was met for the third time, will continue to trend for a maximum of 2 more years. If the established benchmark continues being met, will consider a new assessment tool or objective.

2019-2020:

The program will continue to trend and monitor for one more year as this is the fourth year the benchmark has been met.

2020-2021:

This is the 5<sup>th</sup> year of using this assessment tool. The established benchmark was met for the 5<sup>th</sup> time. It is established the benchmark continues to being met, therefore will consider a new assessment tool or objective at our June meeting.

2021-2022:

The average score on the positioning Portion of the 321L final examination was a 97.14 for this cohort of students (class of 2023). This is the fourth year of using this assessment tool. The established benchmark was met for the fourth time, will continue to trend for a maximum of another year. If the established benchmark continues to being met, will consider a new assessment tool or objective.

2022-2023:

The average score on the positioning portion of the 321L final examination was 98.13 for this cohort of student (class of 2024). At the fall 2022 faculty meeting, it was decided to trend this item for one more year using the RADS 3321L final exam. At the 2023 Fall faculty meeting, a new instrument will be selected for SLO 1.1.

### 8.2 Data

Academic Year	# of students	Average score for F-10 IIC RADS 461
2017-2018	—	2.88
2018-2019	19	2.67
2019-2020	22	2.55
2020-2021	21	2.7
2021-2022	22	2.6
2022-2023	22	2.6



### 8.2.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

The established benchmark was met. The average score on this item for 2018 was 2.67. This is down from 2.88 in 2017. Will continue to monitor, as this benchmark was met for the third year, see an up and down from 2016 to 2018.

2019-2020:

The program will continue to monitor, as this benchmark was met for the fourth year, and the results have went up and down since the program has been assessing this since 2016 using the RADS 461 Form F-10, item II C, and a random sample of three. This is the lowest score since it has been monitor. Will need to trend to make sure it is not going in a downward direction.

2020-2021:

Will continue to monitor, as this benchmark was met for the fifth year, and the program was gradually going up then went down in 2019, still plan to trend to see if the program is going to continue to increase.

2021-2022:

The average score on this item for 2021 is 2.6. This is down from 2.7 in 2020. The established benchmark was met. Looking at the trends of this from 2016-2.38, 2017-2.88, 2018-2.67, 2019-2.55, 2020 2.7. In 2020 decided to trend to see if the results continued to increase. Now in 2021, there is a decrease, therefore will continue to trend.

2022-2023:

The average score on this item for 2022 is 2.6 again. This is exactly what it was in 2021. The established benchmark was met. Looking at the trends of this from 2017-2.88, 2018-2.67, 2019-2.55, 2020 2.7, 2021 2.6. Will continue to trend, as there the benchmark is being met, however, there have been functions since 2018 to current, where it goes up and down. This year is the same as last year. Tending to make sure not consequently on a downward trend for evaluating that students are demonstrating radiographic positioning skills accurately.

## 9 Assessment and Benchmark SLO 1.3 RADS 349 Test 2, and RADS 356 F-9 III A-D

Assessment: Students will be able to apply the principles of radiation protection for the patient, self, and others.

Assessment Instruments:

1. RADS 349 Test 2 average grade
2. RADS 356 F-9, section III A-E

Benchmark 1: An average score of 85 (100 points possible) or higher on Test 2 for RADS 349.

Prior to 2016-2017, the benchmark was an average score of 85 on the final examination for RADS 349.

Benchmark 2: An average score of 3 with a possible score of 4 for III A-D of Form F-9 for the sample selected from RADS 356.

Prior to 2016-2017, the benchmark was an average score of 2 (demonstrates acceptable with minor improvements) or higher on II-D of F-10 from the sample selected.

### Outcome Links

#### Radiation Protection [Program]

Students will be able to apply the principles of radiation protection for the patient, self and others

## 9.1 Data

Academic Year	# of students	RADS 349 Test 2 average grade
2017-2018	—	86.43%
2018-2019	24	76.26%
2019-2020	24	79.75%
2020-2021	24	82.25%
2021-2022	24	79.25%
2022-2023	27	82.08%
2023-2024	30	87.2%

### 9.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

The average of test 2 for this cohort of students was 76.26. There is a decrease of almost 10% points from 2018 which was 86.43. The established benchmark was not met. Will continue to closely monitor, as this is the third consecutive year the score has decreased, however the first year the benchmark has not been met. Also, of the 24 students who were in this cohort of students two were unsuccessful in passing this course and were not able to progress to future RADS courses without repeating this course.

2019-2020:

The program is seeing an increase with this cohort of students over last year's cohort. The actual increase is 4%; however, it is still 5% short of reaching the established benchmark. The program will continue to monitor this outcome in the positive direction.

2020-2021:

The benchmark was still not met, for the third straight year, however it did increase approximately 3 more points from the 2020 cohort of students. For an increase of 6 points from 2019. Will continue to trend as seeing an upward improvement, since 2018 when the benchmark was met.

2021-2022:

The average score for the 2022 cohort taking RADS 349 was 79.25%. The benchmark was still not met, for the fourth straight year, it did decrease approximately 3 more points from the 2021 cohort of students. It is close to the 2020 Cohort which was 79.6, but the all-time low was 2019 when it was 76.26. RADS 349 will not be taught again until the Spring of 2023, at which time a review of content for Test 2, and alternative presentations of material will be discussed at the first faculty meeting of the Fall of 2022.

2022-2023:

Will continue to trend and decide if this tool should be kept since the benchmark was met for the first time in four years. Will be presented at the first faculty meeting in the Fall of 2023.

2023-2024

The benchmark was met using this tool for the first time in many years. The textbook for the course was changed for this course and this is believed to be the contributing factor

## 9.2 Data

Academic Year	# of students	F-10 II D 80% will score a perfect score of 3	F-9 III A-D, RADS 356 average score
2017-2018	—		3.99
2018-2019	22		4.0
2019-2020	21		4.0
2020-2021	22		3.97
2021-2022	22		3.99
2022-2023	19	63	

Academic Year	# of Student in RADS 356	RADS 356 for F-10, item II D (80% or more will score a perfect score of 3 or more.
2023-2024	21	57%

### 9.2.1 Analysis of Data and Plan for Continuous Improvement [Approved]

2018-2019:

For the sample selected the average score on all items for 2019 is 4. It is up from a 3.99 in 2018. The benchmark was met. Still trending, as this is third year of using this assessment tool which began in 2016, and there has been an increase both years.

2019-2020:

For the sample selected the average score on all items for 2020 is 4. It is exactly the same as it was in 2019. The benchmark was met. Still trending, as this is the fourth year of using this assessment tool which began in 2016, and it appears to be plateauing.

2020-2021:

Still trending, as this is 5th year of using this assessment tool which began in 2016, and the score has increased and been steady. Even though a slight decrease was exhibited this year. Will continue to change this instrument used to evaluate this objective, in the next faculty advisory meeting in June of 2021.

2021-2022:

The benchmark was met. However, this item had been trended for several years now and should have been changed, It will be considered for a change in the instrument at the first faculty meeting in the Fall of 2022.

2022-2023:

The benchmark was not met for this item, will be suggested to continue to trend since this is the first year using this instrument again. There are also two items evaluating this SLO one was met and the other was not. Will discuss this at the first faculty meeting in Fall 2023.

2023-2024:

The benchmark was changed for this during 2022-2023, the benchmark was not met during that year, and the benchmark was not met during the 2023-2024 year. This is a new tool, therefore will continue to trend.

**10 Assessment and Benchmark SLO 2.1 RADS 461, and SLO 2.2 RADS 320 L (image analysis)****SLO 2.1:**

Assessment: Students produce radiographic images demonstrating the proper selection of exposure and technical factors.

Assessment Instrument: Embedded Question on RADS 461 unit test, questions 29, 43, 44, 45, 46 and 48.

Benchmark: 80% of the students will answer each embedded question correctly.

**SLO 2.2:**

Assessment: Students will evaluate finished radiographic images, for proper: anatomy visualized, positioning, and exposure factors.

Assessment Instrument: RADS 320L Test 3, Image Analysis section.

Benchmark: 75% of the students will pass the image analysis section of the test.

**Outcome Links****Patient Communication [Program]**

Student will be able to communicate with their patients while implementing the radiography process

**10.1 Data**

Academic Year	Students answering embedded questions correctly RADS 461 (SLO 2.1)		Students passing the image analysis section RADS 320L (SLO 2.2)	
	#	%	#	%
2017-2018	—	75.30%	—	74%
2018-2019	19	78.4%	22	72.7%
2019-2020	21	77.63%	21	59.7%
2020-2021	21	70%	22	80%
2021-2022	22	88%	22	95%
2022-2023	22	61% avg for all questions, met benchmark on two of six questions	19	73.68%
2023-2024	19	The benchmark was met for 3 of the 4 embedded questions	21	71.4% of the students in this cohort passed the image analysis section of the test

**10.1.1 Analysis of Data and Plan for Continuous Improvement**

2018-2019:

SLO 2.1: The desired benchmark not met. The results are 78.4% of the students in this cohort answered the embedded question correctly. This is an increase from 75.3% in 2017, yielding an increase of 3%. Individually it is questions 44, 45, and 46 that were not met. In 2017 the benchmark was not met either and a power point presentation was developed and presented in Spring 2018. Since there was an increase and moving closer to the benchmark, will continue to trend for two more years.

SLO: 2.2: The established benchmark was not met for the second straight year. The results are that 72.7% of this cohort of students passed the image analysis section of the test. The program will continue to trend as this is the third year for using this particular tool, and the first year was so much better. If the third straight year is still not met, will develop some type of class exercised to emphasize image analysis.

**2019-2020:**

The desired benchmark wasn't met. The result is 77.63% of the students in this cohort answered the embedded question correctly. This is a decrease from 78.4 in 2018. Individually it is two of the six embedded questions that were not met. In 2017 and 2018 the benchmark was not met either year. There was a PowerPoint presentation developed and presented in Spring 2018 and there was a 3% increase from 2017 to 2018, however, still not meeting the benchmark. The program will need to plan what to do to improve this area. Even on the second part of assessing this objective of evaluating finished radiographic image for proper anatomy, visualized, positioning, and exposure factors. The program is in the process of developing an exercise or product analysis to emphasize image analysis.

**2020-2021:**

This marks the 4 straight year that this benchmark was not met. The actual questions were reviewed with the clinical instructors at an advisory meeting. The instructors were asked to incorporate similar questions during the case analysis portion of the clinical competency evaluations. In addition, the unit test date is being moved to a date away from the MSU homecoming and NRTW celebrations.

**2021-2022:**

Collectively, the bench mark was met if you consider the average on all six embedded questions. However, if you consider each individual embedded question the desired benchmark not met. The results are met for all but two of the 6 embedded questions. In 2020, the benchmark was met in only two embedded questions, therefore significant progress. When considering each question individually and the bench mark is 80% of the students will answer the questions correctly. This marks the 5th straight year that this benchmark was not met. However, significant was made. The actual questions were reviewed with the clinical preceptors. The preceptors were asked to incorporate similar questions during the case analysis portion of the clinical competency evaluations. In addition, the unit test date was moved to a date away from the MSU homecoming and NRTW celebrations. Continuing to trend.

Regarding objective 2.2 which states the student will evaluate finished radiographic image for proper anatomy visualized, positioning, and exposure factors. The benchmark is 75% of the student will pass the image analysis section for RADS 320L test.

The results were that 95% of this cohort of students passed the image analysis section of the test. This is up from 80% in 2020. The established benchmark was met for the second time in 4 years. Evidence that the Clinical Preceptors asking more informed questions continued to help increase this score again this year.

Continue to trend, as this is the 6th year for using this particular tool. However, the results have be up and down in this area. Clinical Preceptors were asked to continue to increase the questioning on the product analysis to emphasize image analysis.

**2022-2023:**

The benchmark was not met for both tools used to asses this item of evaluating finished radiographs. This marks the 6th straight year that this benchmark was not met for each embedded question. The actual questions were reviewed with the clinical preceptors. The preceptors were asked to incorporate similar questions during the case analysis portion of the clinical competency evaluations. In addition, the unit test date was moved to a date away from the MSU homecoming and NRTW celebrations. For the RADS 320L test, the 3 Image Analysis section will continue to trend, as this is the 7th year of using this particular tool. However, the results have been up and down in this area. Clinical Preceptors were asked to continue to increase the questioning even more on the product analysis to emphasize image analysis.

**2023-2024**

Once age the benchmark was not met for both tools used to SLO 2.1 and SLO 2.2. The RADS faculty will met in the Summer of 2024 to consider developing a new tool for evaluating these two SLO's or deciding to continue to trend with current tools.

*Files: See list of attachments to view. (Requires Adobe Reader or compatible viewer).*

2018 Exposure Image Acquisition pptx (1) (2)

## 11 Assessment and Benchmark

### SLO 3.1:

Assessment: Students will be able to communicate with their patients while implementing the radiography process.

#### Assessment Instruments:

1. RADS 321L Test 2, Procedure section.
2. RADS 355 F-26, item 6

Benchmark 1: 75% of the students will pass the procedure section of the RADS 321 L test 2.

Benchmark 2: 85% of students will receive a score of 8 (10 points possible) or higher on item 6 of Form F-26 final CI evaluation RADS 355.

### SLO 3.2:

Assessment: Students will be able to communicate effectively with clinical staff and peers.

#### Assessment Instruments:

1. RADS 336 F-9 Item V-E.
2. RADS 461 F-26, item 6

Benchmark 1: The average score of 3 (4 points possible) or higher on V- E, of Form F-9 for the sample selected.

Benchmark 2: 90% of students will receive a score of 9 (10 points possible) or higher on item 6 of Form F-26 final CI evaluation RADS 461.

#### Outcome Links

#### Radiographic Positioning [Program]

Students will be able to demonstrate radiographic positioning skills accurately.

### 11.1 Data

Academic Year	Students passing the procedure section, test 2 RADS 321L (SLO 3.1)		Students receiving 8/10 for item 6, F-26 RADS 355 (SLO 3.1)		Student average 3/4 on item V-E, F-9 RADS 356 (SLO 3.2)		Students recieving 9/10 on item 6, F-26 RADS 461 (SLO 3.2)	
	#	%	#	%	#	%	#	%
2017-2018	—	74%	—	100%	—	4.00	—	100%
2018-2019	22	77%	22	100%	22	4.0	19	100%
2019-2020	21	78%	21	100%	21	4.0	22	100%
2020-2021	22	100%	22	100%	22	3.98	21	100%
2021-2022	22	100%	22	100%	22	4.0	22	100%
2022-2023	19	100%	19	100%	19	4.0	22	100%

### 11.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

SLO 3.1: The established benchmark was met. 77% of the students passed the procedure (communication) portion of the RADS 321L test 2 examination. This is up from 2018 when the average score was 74% and the benchmark of 75% was not met. It was decided to continue the trend and watch it for a couple more years, even though both benchmarks were met for SLO 3.1. The decision to continue the trend and watch it for another year at least, was because last year was the first year the benchmark was not met for the RADS 321L test 2 tool.

SLO 3.2:

The established benchmark for both assessment tools was met. This is the fifth year of a five year trending cycle, as was decided in 2013 for the RADS 356 tool of SLO 3.2. The RADS Advisory Committee will decide on another assessment tool for the future at the September 2019 meeting. For the second assessment tool the established benchmark was met. Will continue to monitor, as this is the third straight year of reaching the benchmark for the second tool of 3.2 using the assessment tool which began in 2016.

2019-2020:

The established benchmarks for all assessments were met. This is the first year of the new benchmarks decided in 2018.

2020-2021:

The benchmark was met, with a 22% increase. Will continue to monitor using the same instrument, to make sure the results are not Skewed, because there was a different professor teaching the course.

2021-2022:

For Objective 3.1, two instruments are used and the benchmark was met for both instruments. Will continue to trend using both instruments, as the benchmarks have not always been met.

For Objective 3.2, two instruments are used, one is completed in the spring semester and the program will continue to monitor, as this benchmark was changed in 2018, and there has been an increase each year.

2022-2023:

SLO 3.1, two instruments are used and the benchmark was met for both instruments. Will continue to trend using both instruments, as the benchmarks have not always been met. Documenting Students are able to communicate with their patients while implementing the radiography process

SLO 3.2, two instruments are used, one is completed in the spring semester and the program will continue to monitor, as this benchmark was changed in 2018, and there has been an increase each year. For the other, it is the sixth year this particular tool was used to evaluate this objective. Decided to keep this established tool, as we can trend what happens in a year with the same cohort of students. For this SLO the benchmark was demonstrating the students communicate effectively with clinical staff and peers.

**12 Assessment and Benchmark SLO 4.1 - RADS 356, and SLO 4.2 RADS 461****SLO 4.1:**

Assessment: The student will maintain appropriate conversation with and in the presence of patients

Assessment Instrument: Performance Evaluation (Form F-9) - Item V-A, completed during RADS 356 (random sampling of 3 per student).

Benchmark: 85% of students will score 4 points out of 4 points possible on item V-A, of Form F-9 for the sample selected.

**SLO 4.2:**

Assessment: The student will demonstrate professional ethics while at the assigned Clinical Education Setting.

Assessment Instrument: Clinical Instructor Evaluation of the Student (Form F-26) item 10 for the final CI Evaluation for RADS 461.

Benchmark: 85% of students will receive a score of 10 out of 10 points possible on item 10 of Form F-26 final CI evaluation RADS 461.

Prior to 2016-2017, the benchmark was 85% of students receiving a 9 out of 10.

**Outcome Links****Image Evaluation [Program]**

Students will evaluate finished radiographic images, for proper: anatomy visualized, positioning, and exposure factors

**Patient Care [Program]**

Students will provide patient care and comfort to patients while performing radiographic procedures

**Radiation Protection [Program]**

Students will be able to apply the principles of radiation protection for the patient, self and others

**12.1 Data**

Academic Year	Students receiving 4/4 on item V-A, F-9 RADS 356 (SLO 4.1)	
	#	%
2017-2018	—	100%
2018-2019	22	100%
2019-2020	21	100%
2020-2021	22	86.36%
2021-2022	22	99.2%
2022-2023	22	100%



### 12.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

For 2019, all of those in the random samplings received a score of 4 on Form F-9, item V-A (100%). The e this is the 4th year of trending with an increase in the benchmark.

2019-2020:

For 2020, all of in the random sampling scored a 4 out of 4 on F-9, V-AA. The benchmark was met. This w therefore, the advisory committee will meet and evaluate this objective using another tool to assure that the

2020-2021:

Will continue to trend as this is the 6<sup>th</sup> year of using this tool to measure the objective, however, there was therefore will use the tool for at least 2 more cycles.

2021-2022:

Continue to monitor, as this benchmark was changed in 2018, and there has been an increase each year. with an increase in the benchmark.

2022-2023:

Will continue to trend as this is the 8<sup>h</sup> year of using this tool to measure the objective, however, there has 100% for a second straight year, however, in the past there fluctuations, therefore will investigate for a diff faculty meeting in the Fall of 2023

### 12.2 Data

Academic Year	Students receiving 10/10 on item 10, F-26 RADS 461 (SLO 4.2)	
	#	%
2017-2018	—	88%
2018-2019	19	90%
2019-2020	21	100%
2020-2021	21	95%
2021-2022	22	95%
2022-2023	22	91%

### 12.2.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

The benchmark was met. Continue to trend. This is the second year of a 3–5 year trending cycle which was decided in 2016 and has increased each year.

2019-2020:

For the Fall of 2019, the score on this item is 100% of the cohort of students scored a 101 on item 10, which is up from 90% in 2018. The benchmark was met. The program will continue to trend, this is the fourth year of a 5-year trending cycle.

2020-2021:

For the Fall of 2020, the score on this item was 95% down from 100% in 2019. This is the third year of a 5 year trending cycle. Trends have gone up and down on this item and it has not stabilized, will continue to trend.

2021-2022:

For the Fall of 2021, the score on this item once again was 95%. The benchmark was met. Continuing to trend even though it is the fifth year of a 4-5 year trending cycle which was decided in 2016, trends are going up and down and have not stabilized.

2022-2023:

For 2022, 91% of the cohort of students scored a 10 out of 10 for the tool used to evaluate whether the student demonstrates professional ethics while assigned to the Clinical setting. We will continue with the use of this tool as this bar was raised to a score of 90% in 2020, after seeing the trend that was typically 100% of the cohort receiving a score of 8 or higher.

## 13 Assessment and Benchmark Certification and Licensure Exam

Assessment: Graduates will pass the national certification examination on first attempt.

Assessment Instrument: American Registry of Radiologic Technologists (ARRT) national certification, annual first-time passage rates.

Benchmark 1: The % of graduates who take the ARRT radiography certification examination to become certified radiographers will meet or exceed the national passage rate for first-time examinees.

Benchmark 2: Regardless of the national % passage rate on the ARRT examination, the program passage rate should never drop below 75% over a five-year period.

**13.1 Data**

Academic Year	MSU first-time pass rate	National first-time pass rate	Graduates passing on the first or second attempt		The 5-year average for first time passage rate
			#	%	
2012-2013	83.3%	93.0%	—	100%	96% (08-12)
2013-2014	100%	89.7%	—	100%	96% (09-13)
2014-2015	95%	88.9%	—	100%	95% (10-14)
2015-2016	100%	88.4%	—	100%	95.4% (11-15)
2016-2017	100%	87.2%	—	100%	96.7% (12-16)
2017-2018	100%	89.3%	—	100%	98.94% (13-17)
2018-2019	95%	89.4%	18	100%	97.87% (14-18)
2019-2020	95%	89.0%	19	100%	97.87% (15-19)
2020-2021	100%	88.2%	22	100%	98% (16-20)
2021-2022	100%	83.8%	21	100%	97.2% (17-21)
2022-2023	68%	83.5%	22	96%	91.26 (18-22)

### 13.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

No immediate action because the benchmark was met for the first-time passage rate. Also, when comparing the 5 year average no action necessary, even though there was a decrease in the five-year average. The 2014-2017 five-year average was 98.94%, and the five-year avg for 2018 is 97.87%.

2019-2020:

The benchmark was met for both the first-time passage rate and for the 5-year average.

2020-2021:

The RADS Program continues to excel in meeting the first-time passage rate and the 5-year average. The program met the benchmarks for both areas of the objective and will continue with the current plan of making sure the graduates are prepared for the national certification examination.

2021-2022:

The RADS Program continues to excel in meeting the first-time passage rate and the 5-year average. The program met the benchmarks for both areas of the objective and will continue with the current plan of making sure the graduates are prepared for the national certification examination.

2022-2023:

The RADS program is devastated to report that the MSU program did not have a first-time passage rate of 100%. The first-time passage rate is 68.2 % die 2922. To date, all of those who have retaken the examination have passed with the exception of one student. Our program has never been here before, making it difficult to counsel those who are in this state. The question was raised, how did this compare with their work in the RADS 465 class which prepares the students for the national certification examination, and is the capstone course for the program? Mr. Bradley reported for the first test for the 2022 cohort of students was the lowest in the history of the course. The average score on test one was 52.55 %, below is a comparison of the mock certification raw scores of the tests in RAD 465 for the past 3 years. As the table reveals there was no indicator other than the first test, as the class of 2022 scored higher on all tests.

Year	T1 avg	T2 avg	T 3 avg	T4 avg	T 5 avg	T6 avg	First time passage %	Passage rate %
2020	59.86	69.54	75.82	78.39	85.35	83.12	100%	100%
2021	55.79	65.3	76.79	77.9	81.4	83.12	100 %	100%
2022	52.55	71.9	79.4	84.95	87.5	83.2	68.2 %	TBD

In summary, this is the class that had the most interruptions in their education. Also, this cohort of students had most of their foundation courses in the professional phase delivered in the online format. This was also the first cohort nationally to take the test under the new content specifications.

The other benchmark the program uses on this program effectiveness data item is the first-time % 5-year passage rate should not drop below 75 %. For 2022, the first-time page rate 5-year average is 91.26%.

The decision was made to conduct a thorough curriculum review and investigate alternate review methods. Several of the students who retested stated they used the Clover learning boot camp platform and found it very useful. The program has investigated purchasing review books for all senior students and will purchase the boot camp for students in the 2023 cohort of students.



End of report