

College: College of Nursing and School of Allied Health

Degree Program: Master of Science in Radiologic Sciences

Assessment Year: 2024

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Northwestern State University Mission Statement: Northwestern State University is a responsive, student-oriented institution committed to acquiring, creating, and disseminating knowledge through innovative teaching, research, and service. With its certificate, undergraduate, and graduate programs, Northwestern State University prepares its increasingly diverse student population to contribute to an inclusive global community with a steadfast dedication to improving our region, state, and nation.

College of Nursing and School of Allied Health Mission Statement: Northwestern State University's College of Nursing and School of Allied Health advances the mission of the University through innovative teaching, experiential service learning, and scholarship. The College of Nursing and School of Allied Health offers quality healthcare education to a diverse student population to achieve their goal of becoming responsible healthcare providers who improve the health of our region, state, and nation. (Effective September 1, 2024).

MSRS Program Mission: To provide a learning environment for the development of knowledge, intellectual skills, and dispositions necessary for radiologic sciences professionals to function as leaders in the areas of administration and education and to furnish a foundation for doctoral study.

Program Goals:

- To prepare radiologic sciences professionals who are able to function as leaders in radiologic sciences professions.
- To develop radiologic sciences professionals who are prepared to contribute to the professional body of knowledge.
- To provide a foundation for radiologic sciences professionals to become lifelong learners who strive for continued professional growth.

Program Objectives:

Graduates of the MSRS program will be able to:

- Distinguish leadership skills in radiologic sciences education or administration.
- Utilize critical thinking skills to resolve issues in radiologic or healthcare-related problems.
- Apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.
- Demonstrate effective communication skills in professional settings to maintain collegial and collaborative relationships
- Conduct research studies and disseminate findings and methods to contribute to and improve the practice of the radiologic sciences.
- Implement strategies to effect change within the radiologic sciences profession.
- Evaluate ethical standards in practice as a radiologic sciences educator or administrator.
- Serve as a role model to promote professionalism within the radiologic sciences.
- Contribute to the community and radiologic sciences profession through service.

Methodology

1. Data from assessment tools are collected and sent to the program coordinator.
2. The program coordinator enters the data into the tables for each SLO.
3. The results are shared with the MSRS Assessment Committee. The committee discusses data analysis, interpretation, actions, trends, results, and future plans.
4. The MSRS 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.

Student Learning Outcome 1:

Utilize critical thinking skills to resolve issues in radiologic or healthcare related problems.

Tool	Target	Results					
A. Core Section of the Comprehensive Exam (spring, summer & fall)	90% of students will score 80% or better on their first attempt.		2024	2023	2022	2021	2020
		N	28	10	10	18	11
		Mean	89.3	82.69	84.3	85	82
		Range	80-97.5	69-97	72-96	80-95	41-98
		%	100	70	70	100	81
B. Critical Analysis Paper (RADS 5020) (fall)	100% of students will achieve an average of 85% or higher.	# unmet	0	3	3	0	2
			2024	2023	2022	2021	2020
		N	12	11	27	17	23
		Mean	84	83.91	87	91.4	89.5
		Range	70-93	77-94	65-97	70-97	70-99
C. Item Analysis Assignment (RADS 5220) (spring)	100% of students will achieve an average of 85% or higher.	%	67	36	74	94	79
		# unmet	4	7	7	1	5
			2024	2023	2022		
		N	7	18	10		
		Mean	100	95.72	100		
D. Quality Management Project (RADS 5310) (fall)	100% of students will achieve an average of 85% or higher	Range	100	88-100	100		
		%	100	100	100		
		# unmet	0	0	0		
			2024	2023	2022		
		N	3	4	9		
		Mean	96.67	94.75	91.6		
		Range	92-100	92-96	72-100		
		%	100	100	78		
		# unmet	0	0	2		

SLO 1: Utilize critical thinking skills to resolve issues in radiologic or healthcare related problems.

Findings:

Measure A: Core Section of Comprehensive Exam

2024: Met, 100% of students scored 80% or higher.

Analysis:

Measure A: Core Section of Comprehensive Exam

In 2024, the target was met. The target is that 90% of students will score 80% or better on their first attempt on the core portion of the comprehensive exam. In 2024, 100% of students scored 80% or higher on their first attempt on the core portion of the comprehensive exam. Additionally, the mean score improved to 89.3 for 2024 from 82.69 in 2023.

Based on the analysis of the 2023 results, the exam format was revised to be more indicative of student learning throughout the program. Additionally, a new rubric was developed, and materials to assist students in preparing for the exam were created. Students were informed of these changes during informational sessions.

As a result of these changes, the 2024 target was met, with 100% of students scoring 80 or better on their first attempt on the core portion of the comprehensive exam. These changes positively impacted student performance on the core portion of the comprehensive exam, moving the improvement cycle forward.

Three years ago, the faculty decided to phase out this measure and replace it with a more specific measure of critical thinking. To do this, the faculty decided to implement two new measures (C & D) and collect three years of data before removing this measure from the assessment plan. However, this measure will continue to be used in the program. Additionally, since this exam is still an important part of the program, it is still essential that improvement strategies be implemented.

Decisions:

Measure A: Core Section of Comprehensive Exam

In 2024, the target was that 90% of students would score 80% or higher on their first attempt on the core portion of the comprehensive exam, and 100% of students achieved the target. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Use the revised exam format, which is more indicative of student learning.
- Review materials used to inform students of the exam and help with their preparation.
- Eliminate this measure for the 2025 evaluation cycle and use measures C & D in its place.

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These changes will improve the student's ability to think critically, pushing the improvement cycle forward.

Findings:

Measure B: RADS 5020 Critical Analysis Paper

2024: Unmet, 67% of students scored 85% or higher.

Analysis:

Measure B: RADS 5020 Critical Analysis Paper

In 2024, the target was unmet. The target is for 100% of students to score 85% or higher on the critical analysis paper. For 2024, only 67% of students achieved the target, with four students scoring below the target. In analyzing the cause for students scoring below the target, several issues were identified, including incorrect APA citations, lack of citations throughout the text of the paper, lack of peer-reviewed sources, and late assignments.

Based on the analysis of the 2023 results, the faculty made changes in 2024, including providing more instructions about the expectations for the assignment, creating resources to improve writing skills, and encouraging the use of Feedback Fruits to provide feedback before submission.

As a result of these changes, the target was still unmet; however, there was significant improvement. In 2023, only 36% of students met the target; in 2024, this improved to 67% achieving the target score or higher. While there is still an opportunity for improvement, the changes made directly impacted student outcomes for this measure.

Decisions:

Measure B: RADS 5020 Critical Analysis Paper

In 2024, the target was that 100% of students would score 85% or higher on the critical analysis paper in RADS 5020; however, only 67% of students met the benchmark. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Create a resource outlining the most common errors when writing the critical analysis paper.
- Develop a checklist to help students proof their work before submission.
- Move the assignment later in the semester to allow students more opportunities to develop writing skills before paper submission.
- Continue to use Feedback Fruits to review papers to give students feedback on their writing before submission.

These changes will improve the student's critical thinking ability, pushing the improvement cycle forward.

Findings:

Measure C: RADS 5220 Item Analysis Assignment

2024: Met, 100% of students scored 85% or higher.

Analysis:

Measure C: RADS 5220 Item Analysis Assignment

In 2024, the target was met, with 100% of students scoring 85% or higher on the item analysis project. This is the third year the target was met and the third year this measure was included in the assessment plan.

Based on the analysis of the 2023 results, the faculty decided to continue to use the revised guidelines and rubric that were implemented the prior year. Additionally, the program now has three years of trended data to use going forward in the assessment plan.

As a result of the changes in 2022 and 2023, the target in 2024 was met. The changes demonstrate that the measure is consistent and provides useful information for evaluating student critical thinking skills.

Decisions:

Measure C: RADS 5220 Item Analysis Assignment

In 2024, the target was that 100% of students would score 85% or higher on their first attempt on the core portion of the item analysis assignment, and the target was met for the third year. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Use the revised guidelines and rubric for this assignment to ensure that the data provides useful information regarding students' critical thinking abilities.
- Use the Item Analysis Assignment in place of measure A to evaluate critical thinking.

These changes will improve the student's critical thinking ability, pushing the improvement cycle forward.

Findings:

Measure D: RADS 5310 Quality Management Project

2024: Met, 100% of students scored 85% or higher.

Analysis:

Measure D: RADS 5310 Quality Management Project

In 2024, the target was met, with 100% of students scoring 85% or higher on the quality management project. This is the third year to use this measure in the assessment plan and the second year the target was met.

Based on the analysis of the 2023 results, the faculty decided to continue to use reminders for students to submit assignments by the posted deadlines and to provide an exemplar to demonstrate the intent of the assignment. Both strategies were used to drive improvement.

As a result of the implemented changes, in 2024, the target was again met. These changes improved the mean score (96.67 vs. 94.75) and demonstrated that the measure is useful for evaluating student critical thinking. The program now has three years of trended data for this measure.

Decisions:

Measure D: RADS 5310 Quality Management Project

In 2024, the target was that 100% of students would score 85% or higher on the quality management project in RADS 5310 and the target was met. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Provide additional exemplars to demonstrate the intent of the assignment.
- Use the Quality Management Project in place of measure A to evaluate critical thinking.

These changes will improve the student's ability to think critically, pushing the improvement cycle forward.

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Student Learning Outcome 2:

Apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.

Tool	Benchmark (Target)	Results					
A. Core Section of the Comprehensive Exam (spring, summer, & fall)	90% of students will score 80% or better on the first attempt.		2024	2023	2022	2021	2020
		N	28	10	10	18	11
		Mean	89.3	82.69	84.26	85	82
		Range	80-97.5	69-97	72-96	80-95	41-98
		%	100	70	70	100	81
		# unmet	0	3	3	0	2
B. Evidence-based practice project for education and administration (RADS 5510/5530) (spring & summer)	100% of students will score 85% or higher on the evidence-based project.		2024	2023	2022	2021	2020
		N	25	17	6	21	5
		Mean	94.92	89.41	94.67	98	96
		Range	73-100	65-100	83-100	92-100	90-100
		%	96	71	83	100	100
		# unmet	1	5	1	0	0
C. Teaching Methods Application Presentation (RADS 5210) (fall)	100% of students will achieve an average of 85% or higher.		2024	2023	2022		
		N	5	7	17		
		Mean	97	98.6	97.2		
		Range	93-100	95-100	87-100		
		%	100	100	100		
		# unmet	0	0	0		
D Cybersecurity Assessment (RADS 5330) (summer)	100% of students will achieve an average of 85% or higher.		2024	2023	2022		
		N	3	5	10		
		Mean	91.33	97	92.5		
		Range	90-94	94-100	77-97		
		%	100	100	90		
		# unmet	0	0	1		

SLO 2: Apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.

Findings:

Measure A: Core Section of Comprehensive Exam

2024: Met, 100% of students scored 80% or higher.

Analysis:

Measure A: Core Section of Comprehensive Exam

In 2024, the target was met. The target is that 90% of students will score 80% or better on their first attempt on the core portion of the comprehensive exam. In 2024, 100% of students scored 80% or higher on their first attempt on the core portion of the comprehensive exam. Additionally, the mean score improved to 89.3% in 2024 from 82.69% in 2023.

Based on the analysis of the 2023 results, the exam format was revised to be more indicative of student learning throughout the program. Additionally, a new rubric was developed, and materials to assist students in preparing for the exam were created. Students were informed of these changes during informational sessions.

As a result of these changes, the 2024 target was met, with 100% of students scoring 80% or better on their first attempt on the core portion of the comprehensive exam. These changes positively impacted student performance on the core portion of the comprehensive exam, moving the improvement cycle forward.

Three years ago, the faculty decided to phase out this measure and replace it with a more specific measure of critical thinking. To do this, the faculty decided to implement two new measures (C & D) and collect three years of data before removing this measure from the assessment plan. However, this measure will continue to be used in the program. Additionally, since this exam is still an important part of the program, it is still essential that improvement strategies be implemented.

Decisions:

Measure A: Core Section of Comprehensive Exam

In 2024, the target was that 90% of students would score 80% or higher on their first attempt on the core portion of the comprehensive exam, and 100% of students achieved the target. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Use the revised exam format, which is more indicative of student learning.
- Review materials used to inform students of the exam and help with their preparation.
- Eliminate this measure for the 2025 evaluation cycle and use measures C & D in its place.

MSRS ASSESSMENT 2024

These changes will improve the student's ability to apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.

Findings:

Measure B: RADS 5510/5530 Evidence-Based Practice Project for Education and Administration

2024: Unmet, 96% of students achieved 85% or higher.

Analysis:

Measure B: RADS 5510/5530 Evidence-Based Practice Project for Education and Administration

In 2024, the target was unmet, with only 96% of the students scoring 85% or higher on the Evidence-Based Practice Project. The target is 100% of students scoring 85% or higher on the project. In 2024, only one student did not achieve the target. This student failed to include all components of the assignment.

Based on the analysis of the 2023 results, faculty implemented several strategies for improvement, including advising students of course requirements before enrollment in the course, reminding students of requirements for mentors and project requirements, and creating a checklist to help students ensure all components of the project are included in the student's submission.

As a result of the changes in 2024, the target was again unmet; however, there was significant improvement. In 2024, 96% of students achieved the target, whereas in 2023, only 71% met the target. Additionally, the mean score increased to 94.92% from 89.41%. Improvement is still needed, but the previous year's changes appear to be moving the results in a positive direction.

Decisions:

Measure B: RADS 5510/5530 Evidence-Based Practice Project for Education and Administration

In 2024, the target was that 100% of students would score 85% or higher on the Evidence-Based Practice Project; however, only 96% of students met the benchmark. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Advise students of course requirements during registration.
- Provide reminders about requirements for mentors and project requirements.
- Provide a template for the assignment to ensure all components are included.

These changes will improve the student's ability to apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.

Findings:

Measure C: RADS 5210 Teaching Methods Application Presentation

2024: Met, 100% of students scored 85% or higher.

Analysis:

Measure C: RADS 5210 Teaching Methods Application Presentation

In 2024, the target was met, with 100% of students scoring 85% or higher on the teaching methods application presentation. This is the third year this measure was used in the assessment plan.

Based on the analysis of the 2023 results, faculty continued to use the revised guidelines and rubric for the assignment. Additionally, the faculty gathered another year of data for this measure to ensure that the program had some trended data.

As a result of these changes, the program was successful in continuing positive results for this measure. The program will continue using this measure to assess the student's ability to apply research evidence and skills in practice.

Decisions:

Measure C: RADS 5210 Teaching Methods Application Presentation

In 2024, the target was that 100% of students would score 85% or higher on the Teaching Methods Application Presentation, and the target was met. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Use the revised guidelines and rubric for this assignment to ensure that the data provides useful information regarding students' ability to apply research evidence and skills in the practice setting as an educator.
- Use the Teaching Methods Application Presentation to measure students' ability to apply research evidence and skills in the practice setting instead of measure A.

These changes will improve the student's ability to apply research evidence and skills in the practice setting as an educator in the radiologic sciences to improve practice.

Findings:

Measure D: RADS 5330 Cybersecurity Assessment

2024: Met, 100% of students achieved 85% or higher.

Analysis:

Measure D: RADS 5330 Cybersecurity Assessment

In 2024, the target was met, with 100% of students scoring 85% or higher on the cybersecurity assessment. This is the third year this measure was used in the assessment plan.

Based on the analysis of the 2023 results, the faculty decided to continue using a video to relay expectations of the assignment and the revised guidelines and rubric. Additionally, the faculty gathered another year of data for this measure to ensure that the program had trended data.

As a result of these changes, the program was successful in continuing the positive results for this measure. The program will continue to use this measure in the next assessment cycle.

Decisions:

Measure D: RADS 5330 Cybersecurity Assessment

In 2024, the target was that 100% of students would score 85% or higher on the Cybersecurity Assessment, and 100% of students met the target. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Use the video created to review the expectations for the assignment.
- Use the revised guidelines for the assignment.
- Use the Cybersecurity Assessment to measure students' ability to apply research evidence and skills in the practice setting instead of measure A.

These changes will improve the student's ability to apply research evidence and skills in the practice setting as an administrator in the radiologic sciences to improve practice.

Student Learning Outcome 3:

Demonstrate effective communication skills in professional settings to maintain collegial, collaborative, and interdisciplinary relationships.

Tool	Benchmark (Target)	Results					
A. Research individual presentation (RADS 5110). (spring & fall)	100% of students will achieve an average of 85% or higher.		2024	2023	2022	2021	2020
		N	13	27	13	16	10
		Mean	95.38	92.22	95	97.6	98.5
		Range	82-100	82-100	92-100	90-100	95-100
		%	92	93	100	100	100
		# unmet	1	2	0	0	0
B. Group presentation (RADS 5110) (spring & fall)	100% of students will achieve an average of 85% or higher.		2024	2023	2022	2021	2020
		N	13	28	14	16	10
		Mean	96.31	92.78	97	93	97
		Range	92-100	66-100	91-100	63-100	92-100
		%	100	96	100	88	100
		# unmet	0	1	0	2	0

SLO 3: Demonstrate effective communication skills in professional settings to maintain collegial, collaborative, and interdisciplinary relationships.

Findings:

Measure A: RADS 5110 Research Presentation

2024: Unmet, 92% of students scored 85% or higher on the individual presentation.

Analysis:

Measure A: RADS 5110 Research Presentation

In 2024, the target was unmet, with only 92% of students scoring 85 or higher on the individual presentation. The target is for 100% of students to score 85 or higher. One student scored below the target due to missing components in the assignment and poor information delivery.

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Based on the analysis of the 2023 assessment cycle results, faculty decided to include resources for creating presentations and send reminders for reviewing guidelines to ensure all components were included.

As a result of these changes, in 2024, the target was still unmet; however, only one student did not achieve the target score. While the program strives for all students to achieve the target, having only one student below the target was a slight improvement.

Decisions:

Measure A: RADS 5110 Research Presentation

In 2024, the target was that 100% of students would score 85% or higher on the presentation; however, only 92% met the target.

Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive improvement:

- Update resources for creating presentations.
- Provide reminders to students before assignment submission to review the guidelines and rubric to ensure all components are included.

These actions will improve students' ability to demonstrate effective communication skills in professional settings to maintain collegial and collaborative relationships.

Findings:

Measure B: RADS 5110 Group presentation

2024: Met, 100% of students achieved an average of 85% or higher on the group presentation.

Analysis:

Measure B: RADS 5110 Group presentation

In 2024, the target was met for this assignment, with 100% of students scoring 85% or higher on the group presentation.

Based on the analysis of the 2023 results, the faculty held a live online session to explain the assignment thoroughly. For students who were unable to attend, the session was recorded. Additionally, reminders were sent to get students to meet with their group members as early as possible.

As a result of these changes, in 2024, the target was met; 100% of students scored 85% or higher on the group presentation.

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Decisions:

Measure B: RADS 5110 Group presentation

In 2024, the target was that 100% of students would score 85% or higher on the group presentation, and that target was met. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive improvement:

- Hold live online sessions to explain the assignment thoroughly to students.
- Send reminders early in the semester to get students to start meeting with their group members.

These actions will improve students' ability to demonstrate effective communication skills in professional settings to maintain collegial and collaborative relationships.

Student Learning Outcome 4:

Conduct research studies to contribute to and improve the practice of the radiologic sciences.

Tool	Benchmark (Target)	Results					
A. Applied research project (RADS 5910) (spring, summer & fall)	100% of students will receive a score of 85% or higher.		2024	2023	2022	2021	2020
		N	21	9	12	18	9
		Mean	96	96	95.7	100	99
		Range	91-100	90-100	87-100	100	92-100
		%	100	100	100	100	100
		# unmet	0	0	0	0	0
B. Survey development project (RADS 5123) (spring)	100% of students will receive a score of 85% or higher.		2024	2023	2022	2021	2020
		N	27	17	11	17	7
		Mean	95	87.71	93	96.6	93.5
		Range	85-100	65-100	77-100	93-100	81-100
		%	100	76	91	100	86
		# unmet	0	4	1	0	1
C. Literature Review (RADS 5110) (spring & fall)	100% of students will achieve an average of 80% or higher		2024	2023	2022	2021	2020
		N	13	26	13	16	10
		Mean	89.69	86.73	80.23	90.4	88.5
		Range	80-98	70-97	65-98	80-97	75-98
		%	100	85	38	100	80
		# unmet	0	4	8	0	2

SLO 4: Conduct research studies to contribute to and improve the practice of the radiologic sciences.

Findings:

Measure A: RADS 5910 Applied Research Project

2024: Met, 100% of students achieved 85% or higher.

Analysis:

Measure A: RADS 5910 Applied Research Project

In 2024, the target was met, with 100% of students scoring 85% or higher on the applied research project. This measure was met for the fifth year in a row.

Based on the analysis of the 2023 results, faculty consistently used the revised rubric to grade the student's final projects. The data from the rubric was evaluated, and nothing stood out. Most points were lost for not submitting drafts in a timely manner and for minor writing issues.

As a result of these changes, in 2024, the target was again met, with 100% of students achieving 85% or higher on the applied research project. These changes helped to maintain student success on this measure.

Decisions:

Measure A: RADS 5910 Applied Research Project

In 2024, the target was that 100% of students would score 85% or higher on the Applied Research Project, and for the fifth year, this target was met. Based on the analysis of the 2024 results, the faculty will implement the following changes to drive improvement in 2025.

- Use the revised rubric consistently on all projects.
- Examine the areas where students are having points deducted to determine if there are any trends.
- Faculty will meet each semester to discuss any potential issues and address them immediately.
- Faculty will communicate with students throughout each semester to discuss any potential problems the student may encounter.

These actions will improve students' ability to conduct research studies to contribute to and improve the practice of the radiologic sciences.

Findings:

Measure B: RADS 5123 Survey Development Project

2024: Met, 100% of students achieved an 85% or higher.

Analysis:

Measure B: RADS 5123 Survey Development Project

In 2024, 100% of students met the target and achieved 85% or higher on the survey development project.

Based on the analysis of the 2023 results, the faculty decided to provide reminders to students to encourage them to start the assignment early and to review the guidelines and rubric. Additionally, the course included a template to help students ensure that they included all components in their submissions.

As a result of these changes, 100% of students met the target. This is a marked improvement from 2023, when only 76% of students met the target. The changes had a direct impact on student performance for this measure.

Decisions:

Measure B: RADS 5123 Survey Development Project

In 2024, the target was that 100% of students would score 85 or higher on the Survey Development Project, and the target was met.

Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the cycle of improvement:

- Send email reminders encouraging students to start the assignment early and outline its requirements.
- Use of the template for the assignment to ensure students include all components of the assignment.
- Faculty will hold online session prior to submission of the assignment to answer student questions and provide guidance on all components of the assignment.

These actions will improve students' ability to conduct research studies to contribute to and improve the practice of the radiologic sciences.

Findings:

Measure C: RADS 5110 Research Paper

2024: Met, 100% of students scored 80% or higher.

Analysis:

Measure C: RADS 5110 Research Paper

In 2024, the target was met, with 100% of students scoring 80% or higher on the research paper assignment.

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Based on the analysis of the 2023 results, faculty decided to revise the AI policy in the syllabus to be more explicit regarding expectations and consequences for use, create a video regarding AI use, encourage students to use Feedback Fruits to get feedback on their writing before assignment submission; develop activity on theoretical frameworks to help students identify appropriate theories; and continue to hold live online sessions to answer student questions.

As a result of these changes, 100% of students achieved the target in 2024, an improvement from 2023, where only 85% of students achieved the target. The changes made to the course had a direct positive impact on student success for this measure.

Decisions:

Measure C: RADS 5110 Research Paper

In 2024, the target was that 100% of students would score 80% or higher on their 5110 research papers, and this target was met.

Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the cycle of improvement:

- Review and update AI policy and video on AI.
- Encourage students to use Feedback Fruits to get feedback on their writing before the final submission of the assignment.
- Hold live online sessions to answer student questions and provide more information for expectations.

These actions will improve students' ability to conduct research studies to contribute to and improve the practice of the radiologic sciences.

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Student Learning Outcome 5:

Evaluate ethical standards in practice as a radiologic sciences educator or administrator.

Tool	Benchmark (Target)	Results									
A. Core and Concentration Sections of the Comprehensive Exam (spring, summer, & fall)	90% of students will score 80% or better on both sections on the first attempt.		2024	2023	2022	2021	2020				
		N	28	10	10	18	11				
		Tools	Core	Conc	Core	Conc	Core	Conc	Core	Conc	
		Mean	89.3	89	82.69	78.94	84	89	85	90	82
		Range	80-97.5	80-100	69-97	55.38-90	72-96	70-100	80-95	75-100	41-98
		%	100	100	70	70	70	80	100	94.4	82
		# unmet	0	0	3	3	3	2	0	1	2
B. Legal and Ethical presentation (RADS 5030) (summer)	100% of students will achieve an average of 85% or higher.		2024	2023	2022	2021	2020				
		N	10	23	19	10	21				
		Mean	93.8	96.65	98	95	97.71				
		Range	70-100	43-100	90-100	76-100	86-100				
		%	90	96	100	90	100				
		# unmet	1	1	0	1	0				
C. CITI Social & Behavioral Research Modules (RADS 5010) (spring)	100% of students will receive a total score of 85% or higher.		2024	2023	2022						
		N	11	17	36						
		Mean	90.82	90.82	92.31						
		Range	81-100	81-97	81-100						
		%	91	94.11	69.44						
		# unmet	1	1	11						

SLO 5: Evaluate ethical standards in practice as a radiologic sciences educator or administrator.

Findings:

Measure A: Core and Concentration Sections of Comprehensive Exam

2024: Unmet, 100% of students achieved an 80% or better on the core and concentration sections of the comprehensive exam.

Analysis:

Measure A: Core and Concentration Sections of Comprehensive Exam

In 2024, the target was met. The target is that 90% of students will score 80% or better on their first attempt on the core and concentration portions of the comprehensive exam. In 2024, 100% of students scored 80% or higher on their first attempt on the core and concentration portions of the comprehensive exam. Additionally, the mean score improved from 2023 for both sections as well.

Based on the analysis of the 2023 results, the exam format was revised to be more indicative of student learning throughout the program. Additionally, a new rubric was developed, and materials to assist students in preparing for the exam were created. Students were informed of these changes during informational sessions.

As a result of these changes, the 2024 target was met, with 100% of students scoring 80% or better on their first attempt on the core and concentration portions of the comprehensive exam. These changes positively impacted student performance on the comprehensive exam, moving the improvement cycle forward.

Decisions:

Measure A: Core and Concentration Sections of Comprehensive Exam

In 2024, the target was that 90% of students would score 80% or higher on their first attempt on the core and concentration portions of the comprehensive exam, and the target was met for both portions. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Use the revised exam format, which is more indicative of student learning.
- Review materials used to inform students of the exam and help with their preparation.
- Eliminate this measure for the 2025 evaluation cycle and use measure C in its place.

These actions will improve students' ability to evaluate ethical standards in practice as a radiologic sciences educator or administrator.

Findings:

Measure B: RADS 5030 Legal and Ethical Presentation

2024: Unmet, 90% of students achieved 85% or higher.

Analysis:

Measure B: RADS 5530 Legal and Ethical Presentation

In 2024, the target was unmet. The target is that 100% of students will score 85% or higher on the legal and ethical presentation; however, only 90% of students scored 85% or higher. One student did not achieve the target due to not submitting all the components of the assignment, which is the same reason the target was not achieved in 2023 as well.

Based on the analysis of the 2023 data, faculty decided to provide sample completed presentation assignments to help them understand the expectations for the assignment.

As a result of these changes, in 2024, the target continued to be unmet.

Decisions:

Measure B: RADS 5030 Legal and Ethical Presentation

In 2024, the target was unmet, with 90% of students scoring 85% or higher on the Legal and Ethical Presentation. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the improvement cycle.

- Allow students to review current sample presentation assignments to set the expectations for the quality of the assignment.
- Update the assignment instructions and add more detail on the expected criteria to include an outline of the headings for the PowerPoint presentation.
- Provide a list of topics for students to choose from.

These actions will improve students' ability to evaluate ethical standards in practice as a radiologic sciences educator or administrator.

Findings:

Measure C: RADS 5010 CITI Social & Behavioral Research Module

2024: Unmet, 91% of students achieved a total score of 85% or higher.

Analysis:

Measure C: RADS 5010 CITI Social & Behavioral Research Module

In 2024, the target was unmet. The target is that 100% of students will score 85% or higher on the CITI social and behavioral research module; however, only 91% of students met the target. One student scored below 85%.

In 2023, the faculty decided to emphasize the importance of the module to students. Also, faculty continued to collect data for this measure to ensure that data was collected to evaluate trends.

As a result of these changes, the measure continued to be unmet.

Decisions:

Measure C: RADS 5010 CITI Social & Behavioral Research Module

In 2024, the target was unmet, with 91% meeting the target of scoring 85% or higher on the CITI Social & Behavioral Research Module. Based on the analysis of the 2024 results, the faculty will implement the following changes in 2025 to drive the cycle of improvement:

- Add information in Moodle to emphasize the importance of the modules to students before they complete them.
- Use this tool to measure students' ability to evaluate ethical standards in practice and begin in place of measure A.

These actions will improve students' ability to evaluate ethical standards in practice as a radiologic sciences educator or administrator.

Summary of 2024 Assessment for the MSRS Program

In 2024, 16 measures were used to assess the 5 SLOs in the MSRS assessment plan. Eleven of the sixteen targets were met, with only five being unmet. This is a significant improvement from 2023, when 11 targets were unmet. Additionally, there were very few unsuccessful students of the five measures where the target was unmet. These improvements were due to the impact of the changes that were driven by the assessment plan. The faculty worked hard to implement all the strategies that were discussed and determined to be the best approaches to drive improvement in the program. While all targets were not met, the faculty are confident that the strategies that will be implemented in 2025 will be successful in improving student outcomes further. Faculty often discuss the results of the assessment plan, and although the results are not perfect, the truth is that many of our targets are intentionally set high. The MSRS program strives for our students to meet high standards. Therefore, the faculty feels it is important to continue our quest to help students meet the high goals that have been set.

In 2025, three tools will be removed from the plan since three years of trended data have been obtained for the new measures that will replace them. The faculty are pleased with the new measures and feel they are more indicative of student learning for each outcome they will represent. Moving forward, the faculty will continue to evaluate the new measures and all measures within the assessment plan to ensure that they remain appropriate for outcomes.

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

The following reflects all the changes implemented to drive the continuous process of seeking improvement in 2024. These changes are based on the knowledge gained through the 2023 results analysis. As always, continuous improvement is the focus of the MSRS program.

- SLO 1: Utilize critical thinking skills to resolve issues in radiologic or healthcare-related problems.
 - Revised the format of the exam to be more indicative of student learning.
 - Developed a new rubric for evaluating student submissions on the exam.
 - Created materials to inform students of the exam changes and help with their preparation.
 - Used the core comprehensive exam as a measure for one more year and then phase out and use measures C & D in its place.
 - Provided more information regarding writing expectations for the assignment.
 - Created learning resources to assist students with understanding how to provide adequate support for the points they make in their papers.
 - Used Feedback Fruits to review papers to give students feedback on their writing before submission.
 - Used the revised guidelines and rubric for this assignment to ensure that the data provides useful information regarding students' critical thinking abilities.
 - Used new tools to measure critical thinking and began to get data that can be trended.
 - Utilized additional methods to remind students of due dates, such as recorded video or audio messages.
 - Provided an exemplar to demonstrate the intent of the assignment.
- SLO 2: Apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.
 - Revised the format of the exam to be more indicative of student learning.
 - Developed a new rubric for evaluating student submissions on the exam.
 - Created materials to inform students of the exam changes and help with their preparation.
 - Used the core comprehensive exam as a measure for one more year and then phase out and use measures C & D in its place.
 - Advise students of course requirements during registration.
 - Sent emails prior to the course to request that students watch the video regarding the mentor and expectations for the course.
 - Sent email reminders about the Evidence-Based Practice Project requirements to help ensure that students include all components of the project.
 - Created a checklist of the components of the project to help students ensure that everything that is required is included in their submission.
 - Used the revised guidelines and rubric for this assignment to ensure that the data provides useful information regarding students' ability to apply research evidence and skills in the practice setting as an educator.
 - Used new tools to measure students' ability to apply research evidence and skills in the practice setting and begin to get data that can be trended.
 - Used the video created to review the expectations for the assignment.

- Continued to use the revised guidelines for the assignment.
- SLO 3: Demonstrate effective communication skills in professional settings to maintain collegial and collaborative relationships.
 - Course instructors continued to include resources for creating presentations.
 - Provided reminders to students prior to submission of the assignment to review the guidelines and rubric to ensure that all components are included.
 - Held live online sessions to explain the assignment thoroughly to students.
 - Sent reminders early in the semester to get students to start meeting with their group members.
- SLO 4: Conduct research studies to contribute to and improve the practice of the radiologic sciences.
 - Used the revised rubric consistently on all projects.
 - Examined the areas where students are having points deducted to determine if there are any trends.
 - Sent email reminders encouraging students to start the assignment early and outline its requirements.
 - Created a checklist to help students ensure that all components of the project are included in the submission.
 - Revised AI policy in the syllabus to be more explicit regarding expectations and consequences of inappropriate use.
 - Created a video discussing the use of AI.
 - Encouraged students to use Feedback Fruits to get feedback on their writing prior to the final submission of the assignment.
 - Developed a course activity related to theoretical frameworks to help students identify a framework appropriate for their topic and receive feedback.
 - Held live online sessions to answer student questions and provide more information for expectations.
- SLO 5: Evaluate ethical standards in practice as a radiologic sciences educator or administrator.
 - Revised the format of the exam to be more indicative of student learning.
 - Developed a new rubric for evaluating student submissions on the exam.
 - Created materials to inform students of the exam changes and help with their preparation.
 - Used the core and concentration comprehensive exams as a measure for one more year and then phase out and use measure C in its place.
 - Allowed students to review current sample presentation assignments to set the expectations for the quality of the assignment.
 - Emphasized the importance of the modules to students before they complete them.
 - Measured students' ability to evaluate ethical standards in practice and begin to obtain data for trending.

Plan of Action Moving Forward in 2025

Based on the evidence provided by the 2024 assessment plan, the MSRS program will make the following changes for continuous program improvement:

- SLO 1: Utilize critical thinking skills to resolve issues in radiologic or healthcare-related problems.
 - Used the revised exam format, which is more indicative of student learning.
 - Review materials used to inform students of the exam and help with their preparation.
 - Eliminate the core comprehensive exam as a measure for the 2025 evaluation cycle and use measures C & D in its place.
 - Create a resource outlining the most common errors in writing the critical analysis paper.
 - Develop a checklist to help students proof their work before submission.
 - Move the critical analysis paper later in the semester to allow students more opportunities to develop writing skills before paper submission.
 - Used Feedback Fruits to review papers to give students feedback on their writing before submission.
 - Use the revised guidelines and rubric for the item analysis assignment to ensure that the data provides useful information regarding students' critical thinking abilities.
 - Use the item analysis assignment in place of measure A (core comprehensive exam) to evaluate critical thinking.
 - Provide additional exemplars to demonstrate the intent of the QM project.
 - Use the QM project in place of measure A (core comprehensive exam) to evaluate critical thinking.
- SLO 2: Apply research evidence and skills in the practice setting as an educator or administrator in the radiologic sciences to improve practice.
 - Used the revised exam format, which is more indicative of student learning.
 - Review materials used to inform students of the exam and help with their preparation.
 - Eliminate the core comprehensive exam as a measure for the 2025 evaluation cycle and use measures C & D in its place.
 - Advised students of course requirements during registration.
 - Provide reminders about requirements for mentors and project requirements.
 - Provide a template for the assignment to ensure all components are included.
 - Continue to use the revised guidelines and rubric for the teaching methods presentation to ensure that the data provides useful information regarding students' ability to apply research evidence and skills in the practice setting as an educator.
 - Use the teaching methods presentation to measure students' ability to apply research evidence and skills in the practice setting instead of measure A (core comprehensive exam).
 - Used the video created to review the expectations for the cyber security assessment.
 - Used the revised guidelines for the cyber security assessment.

- Use the cyber security assessment to measure students' ability to apply research evidence and skills in the practice setting instead of measure A (core comprehensive exam).
- SLO 3: Demonstrate effective communication skills in professional settings to maintain collegial and collaborative relationships.
 - Update resources for creating presentations.
 - Provide reminders to students before assignment submission to review the guidelines and rubric to ensure all components are included.
 - Held hold live online sessions to explain the assignment thoroughly to students.
 - Send reminders early in the semester to get students to start meeting with their group members.
- SLO 4: Conduct research studies to contribute to and improve the practice of the radiologic sciences.
 - Used the revised rubric consistently on all applied research projects.
 - Examined the areas where students are having points deducted on the applied research project to determine if there are any trends.
 - Faculty will meet each semester to discuss any potential issues and address them immediately.
 - Faculty will communicate with students throughout each semester to discuss any potential problems the student may encounter.
 - Sent email reminders encouraging students to start the survey development project early and outline its requirements.
 - Used a template for the survey development project to ensure students include all components of the assignment.
 - Faculty will hold online session prior to submission of the assignment to answer student questions and provide guidance on all components of the assignment.
 - Review and update AI policy and video on AI.
 - Encourage students to use Feedback Fruits to get feedback on their writing before the final submission of the assignment.
 - Held live online sessions to answer student questions and provide more information for expectations.
- SLO 5: Evaluate ethical standards in practice as a radiologic sciences educator or administrator.
 - Used the revised exam format, which is more indicative of student learning.
 - Review materials used to inform students of the exam and help with their preparation.
 - Eliminate this measure for the 2025 evaluation cycle and use measure C in its place.
 - Allow students to review current sample presentation assignments to set the expectations for the quality of the assignment.
 - Update the assignment instructions and add more detail on the expected criteria to include an outline of the headings for the PowerPoint presentation.
 - Provide a list of topics for students to choose from.

- Add information in Moodle to emphasize the importance of the modules to students before they complete them.
- Use this tool to measure students' ability to evaluate ethical standards in practice and begin in place of measure A.