

Doisy College of Health Sciences Program-Level Assessment: Annual Report

Program: Nuclear Medicine Technology

Degree or Certificate Level: BS

Date (Month/Year): September 2020

Primary Assessment Contact: Crystal Botkin

College/School: Doisy College of Health Sciences

Department: Clinical Health Sciences

In what year/cycle was the data upon which this report is based collected? 2019/2020

In what year/cycle was the program's assessment plan most recently reviewed/updated? 2018/2019

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle?

PLO #1: Students will demonstrate the Jesuit value of "Cura Personalis" as they perform diagnostic imaging procedures. **PLO #2**: Students will demonstrate effective communication when speaking with both patients and other healthcare professionals in the nuclear medicine department.

PLO #3: Students will use knowledge, facts and data to assess problems and find solutions that relate to nuclear medicine imaging procedures.

PLO #4: Students will demonstrate the ability to translate didactic knowledge into clinical practice as a nuclear medicine technologist.

PLO #5: Students will exhibit professional characteristics expected of nuclear medicine technologists.

2. Assessment Methods: Student Artifacts

Which student artifacts were used to determine if students achieved this outcome? Please identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

PLO #1

NMT 4410 Clinical Practicum / Critical Reflection Assignment #1

A written critical reflection assignment served as an artifact to assess this PLO. Each student is given a prompt to respond the Jesuit values and how they are reflected in the clinical setting (see Appendix for assignment prompt and grading rubric).

This course meets at clinical affiliate sites in the St. Louis Metropolitan Area.

NMT 4910 Clinical Practicum / Program faculty observation during fifth month of rotation clinical visits

The NMT program faculty complete a form (see appendix) for each student clinical visit during 3rd rotation in the clinical phase of the NMT program. The form is completed bases on notes, observations and discussion with clinical preceptors about Jesuit values. These visits occur in May each year.

This course meets at clinical affiliates sites in the St. Louis Metropolitan Area.

NMT 4960 Capstone in Nuclear Medicine / Capstone Presentation

The NMT capstone is a basic research assignment which includes both oral presentation and paper. The presentation portion of this assignment is used to assess this PLO (see Appendix for assignment prompt and grading rubric).

This course meets on the Saint Louis Campus.

NMT 4410 and NMT 4910 Clinical Practicum/Final evaluation questions regarding effective communication in patient interaction

The NMT program faculty conduct oral, comprehensive evaluations of each NMT student during the last month of the program. During this evaluation, the students are assessed for the ability to provide effective communication skills in regards to patient interactions.

These courses meet at clinical affiliate sites in the St. Louis Metropolitan Area.

PLO #3

NMT 4350 Nuclear Medicine Information Systems / Case Study Project (Written)

This case study project serves as an artifact for this PLO. Each student is given an assignment prompt to evaluate an assigned case study. This assignment is used to demonstrate the ability to apply the skills and knowledge of processing and evaluating nuclear medicine exams based on the knowledge and skills learned in this course. (See appendix for assignment prompt and assessment rubric)

This course meets on the Saint Louis Campus.

NMT 4430 Emerging Technologies / Case Study Presentation (Oral)

The presentation of interesting nuclear medicine exams is used as an artifact for this PLO. Each student is given an assignment prompt to identify 2 different nuclear medicine exams to present in class. One if the cases is assigned by the course instructor and the other is chosen by the student. The oral presentations are completed toward the end of the semester and are used to demonstrate the students' ability to build on the knowledge obtained in class, by providing "real" cases seen in the clinic and conveying knowledge to their peers in the class.

PLO #4

NMT 4340 Clinical Nuclear Medicine / Clinical Simulation/Role-Playing

Based on the content covered in the course, the course instructor assigns each student nuclear medicine procedure(s) to portray a technologist and/or patient perspective. The assessment rubric (see appendix) is used to guide the students on the specific areas the students must explain during the role-playing exercise. The students are paired up and provide explanation to a classmate and/or course instructor. This exercise provides the opportunity for the students to begin to translate didactic knowledge into clinical practice before beginning clinical practicum rotations.

This course meets on the Saint Louis Campus.

NMT 4910 Clinical Practicum / Clinical visit evaluation during last month of clinical practicum

The NMT program faculty conduct oral, comprehensive evaluations of each NMT student during the last month of the program. During this evaluation, the students are required to translate didactic knowledge into clinical practice.

This course meets at clinical affiliate sites in the St. Louis Metropolitan Area.

NMT 4410 Clinical Practicum / Clinical visit evaluation during 2 months of clinical practicum

The NMT program faculty complete a form (see appendix) for each student clinical visit during 1st rotation in the clinical phase of the NMT program. The form is completed bases on notes, observations and discussion with clinical preceptors about professional behavior. These visits occur in February each year.

This course meets at clinical affiliate sites in the St. Louis Metropolitan Area.

NMT 4910 Clinical Practicum / Clinical visit evaluation during 7 months of clinical practicum

The NMT program faculty complete a form (see appendix) for each student clinical visit during 4th rotation in the clinical phase of the NMT program. The form is completed bases on notes, observations and discussion with clinical preceptors about professional behavior. These visits occur in June each year.

This course meets at clinical affiliate sites in the St. Louis Metropolitan Area.

3. Assessment Methods: Evaluation Process

What process was used to evaluate the student artifacts, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and include them in/with this report.

PLO #1

NMT 4410 Clinical Practicum / Critical Reflection Assignment #1

Each of the critical reflections assignments were evaluated by the course instructor using an assessment rubric (see appendix). The instructor provided a summary of the student scores to the program director. In addition, the Program Director reviewed the critical reflections to identify the mention of "cura personalis" as one of the Jesuit values. The program director identified students scoring \geq 10 out of 15 AND the mention of "cura personalis" as achieving the ranking of "knowledge" or higher.

The initial review raised a question for further investigation: Does mentioning the Jesuit value of "cura personalis" truly reflect the ranking of "knowledge"?

To address this question further, the program director reviewed the critical reflections to assess if the mention of "cura personalis" was followed by appropriately defining the value.

The program director then reviewed the assessment rubric contents to determine whether the rankings and descriptions are appropriate for this artifact.

NMT 4910 Clinical Practicum / Program faculty observation during the fifth month of rotation clinical visits

The NMT faculty collected the visit forms (see appendix) and notes from the third rotation visits which occur in May of each year for the students enrolled in this course. The program director reviewed the data, including the pass/fail status of the visit. The comments were reviewed to assess each students' ability to convey the concepts discussed during the visit. In addition, the program director sought comments/noted which relate to Jesuit values on each of the visit forms. If such comments were identified this was marked as achieving the raking of "application" or higher.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect the Jesuit values when performing clinical visits?

To address this further, the program director consulted the NMT faculty to identify a way to ensure this is done consistently in the future.

NMT 4960 Capstone in Nuclear Medicine / Capstone Presentation

Each of the student presentations are evaluated by NMT program faculty and/or clinical preceptor(s) using an assessment rubric (see appendix). The student presentations and evaluations typically take place in person during a scheduled presentation date. However, due to COVID-19, the NMT students were asked to record their presentations via ZOOM. The recorded presentations were reviewed by NMT faculty asynchronously. The NMT program director reviewed the completed evaluations from faculty and used section "D. Preparation and Presentation" on the grading rubric to assess the communication skills of the students. Per the assessment rubric of this assignment, students who score a 3 or less are not well prepared and their presentation is faulty. Therefore, the program director identified students scoring 4 or greater in this section as achieving the ranking of "application" or higher.

NMT 4410 and NMT 4910 Clinical Practicum/Final evaluation questions regarding effective communication in patient interaction

The NMT program faculty conduct oral, comprehensive evaluations of each NMT student during the last month of the program. During this evaluation, the students are required to convey effective communication skills for patient interactions in the field of nuclear medicine. The NMT faculty provide a pass/fail status for this evaluation.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect these skills during the final evaluation?

To address this further, the program director consulted the NMT faculty to identify a way to ensure this is done consistently in the future.

PLO #3

NMT 4350 Nuclear Medicine Information Systems / Case Study Project (Written)

Each of the student projects were evaluated by the course instructor using an assessment rubric (see appendix). The instructor provided a summary of the student scores to the program director. After reviewing the rubric for this assignment, the program director identified students scoring \geq 80% as achieving the ranking of "knowledge" or higher. Per the assignment rubric, a score of 80% puts the students in the category of "Complete, good detail". Using the assessment rubric, "knowledge" ranking indicates the ability to "identify errors in an imaging study." This course provides the first opportunity for NMT students to review imaging studies, therefore "knowledge" is an appropriate ranking.

NMT 4430 Emerging Technologies / Case Study Presentation (Oral)

Each of the student projects were evaluated by the course instructor using an assessment rubric (see appendix). The instructor provided a summary of the student scores to the program director. After reviewing the rubric for this assignment, the program director identified students scoring \geq 8/10 for each case as achieving the ranking of "application" or higher. Using the assessment rubric, "application" ranking indicates the ability to "interpret data presented in an imaging case study." This course provides the opportunity for NMT students to practice the connection of didactic knowledge with clinical practice presenting normal and abnormal nuclear medicine imaging cases and identifying why each case is a such, therefore "application" is an appropriate ranking.

PLO #4

NMT 4340 Clinical Nuclear Medicine / Clinical Simulation/Role Playing

Each of the student projects were evaluated by the course instructor using an assessment rubric (see appendix). The instructor provided a summary of the student scores to the program director. After reviewing the rubric for this assignment, the program director identified students scoring \geq 11/15 as achieving the ranking of "knowledge" or higher. Using the assessment rubric, "knowledge" ranking indicates the ability to "recall facts and theories relating to nuclear medicine technology." This course provides

the first opportunity for NMT students to practice the connection of didactic knowledge with clinical practice by simulating the technologist/patient roles, therefore "knowledge" is an appropriate ranking.

NMT 4910 Clinical Practicum / Clinical visit evaluation during last month of clinical practicum

The NMT program faculty conduct oral, comprehensive evaluations of each NMT student during the last month of the program. During this evaluation, the students are required to translate didactic knowledge into clinical practice. The NMT faculty use a pass/fail status for this evaluation.

The initial review raised a question for further investigation: How is the pass/fail status identified? Do the NMT faculty use a consistent measure? There is not a rubric for the evaluation currently.

PLO #5

NMT 4410 Clinical Practicum / Clinical visit evaluation during the second month of clinical practicum

The NMT faculty collected the visit forms (see appendix) and notes from the first rotation visits which occur in February of each year for the students enrolled in this course. The program director reviewed the data, including the pass/fail status of the visit. The comments were reviewed to assess each students' ability to convey the concepts discussed during the visit. In addition, the program director sought comments/noted which relate to professional characteristics on each of the visit forms. If such comments were identified this was marked as achieving the raking of "application" or higher.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect the professional characteristics when performing clinical visits?

NMT 4910 Clinical Practicum / Clinical visit evaluation during the 7 month of clinical practicum

The NMT faculty collected the visit forms (see appendix) and notes from the first rotation visits which occur in February of each year for the students enrolled in this course. The program director reviewed the data, including the pass/fail status of the visit. The comments were reviewed to assess each students' ability to convey the concepts discussed during the visit. In addition, the program director sought comments/noted which relate to professional characteristics on each of the visit forms. If such comments were identified this was marked as achieving a ranking of "synthesis" or higher.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect the professional characteristics when performing clinical visits?

4. Data/Results

What were the results of the assessment of the learning outcomes? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

PLO #1

NMT 4410 Clinical Practicum / Critical Reflection Assignment #1

An average of >85%, 8/9 (89%) of the NMT students scored <a>>10/15 on the critical reflection assignment. The remaining 2 students lacked the ability to provide examples of Jesuit values within the critical reflection writing assignment. However, only 44% (4/9) made mention of "cura personalis" in their description of Jesuit values, while others (5/9 or 56%) used the term "compassion."

In digging deeper, the program director reviewed the definitions for the students who mentioned "cura personalis" and found that indeed all students could appropriately define this Jesuit value. However, only 2/5 or 40% of those who used the term compassion defined it similarly to "cura personalis." Therefore, the > 85% program target was not met for this artifact.

The program director investigated the reason for these results and noticed the assignment prompt had not been changed to reflect the change in the assessment rubric made last year. The rubric did not reflect the specific Jesuit value of "cura personalis". The previous rubric used the broad term Jesuit values. The program director informed the course instructor and the change will be made for the next review cycle.

NMT 4910 Clinical Practicum / Program faculty observation during fifth month of rotation clinical visits

This artifact was unable to be completed in the 2019-2020 academic year due to COVID-19. The NMT students were removed from the clinic on March 19, 2020 and did not return until June 1, 2020.

PLO #2

NMT 4960 Capstone in Nuclear Medicine / Capstone Presentation

An average of >85% (8/9 or 89%) of the students scored \geq 4 in section D. Preparation and Presentation of the assessment rubric. The remaining one student (11%) received <4 this this section indicating the student's presentation was not well prepared and the faulty. Therefore, the ranking of "application" or higher was achieved.

NMT 4410 and NMT 4910 Clinical Practicum/Final evaluation questions regarding effective communication in patient interaction

An average of 78% (7/9) of the students could convey effective communication skills for patient interactions in the field of nuclear medicine. This fact is based on the passing option given by the NMT faculty member who performed the oral evaluation. The other 2 students (22%) were not able to convey this knowledge on their first attempt and they received a failing option. Therefore, the NMT faculty provided a review of concepts and met with the students for a second time. After the second evaluation, the other students' grades were changed to passing status.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect these skills during the final evaluation? After consultation with NMT faculty, the program director found this to be inconsistent among faculty.

To address this further, the program director consulted the NMT faculty to identify a way to ensure this is done consistently future assessment cycles.

PLO #3

NMT 4350 Nuclear Medicine Information Systems / Case Study Project (Writing Based)

An average of >85% (9/9 or 100%) of the students received score of \ge 80% ranking of "knowledge" or higher. The program director was originally given the total scores not the breakdown of scores based on the assessment rubric. Therefore, the program director asked the course instructor to provide information regarding whether there were trends found in the grading that shows areas which may be improved upon for the next time the course is offered. Areas identified by the instructor were patient positioning and acquisition parameters.

NMT 4430 Emerging Technologies / Case Study Presentation (Presentation Based)

An average of >85% (9/9 or 100%) of the students received a score of <u>></u>8/10 and achieved a ranking of "application" or higher. While the program target was met, the course instructor may evaluate how to incorporate additional presentation types of exercises in the course or future courses.

PLO #4 NMT 4340 Clinical Nuclear Medicine / Clinical Simulation/Role Playing

An average of >85% (9/9 or 100%) of the students received a score of ≥11/15 and achieved a ranking of "application" or higher. This exercise is developmental in nature and allows the students the opportunity to simulate the connection of didactic knowledge in the clinical setting. The course instructor spends time with each student reviewing the areas of weakness through the grading process. In addition, the students do not have to opportunity to complete this exercise again for the same nuclear medicine exam, therefore, progress within this course is not feasible. Progress should be noted from this course to the NMT practicum course where the PLO is measured once again and a high ranking is expected.

NMT 4910 Clinical Practicum / Clinical visit evaluation during last month of clinical practicum

The \geq 85% program target was not met. An average of 78% (7/9) of the students could translate didactic knowledge into clinical practice in nuclear medicine. This fact is based on the passing option given by the NMT faculty member who performed the oral evaluation. The other 2 students (22%) were not able to convey this knowledge on their first attempt and they received a failing option. Therefore, the NMT faculty provided a review of concepts and met with the students for a second time. After the second evaluation, the other students' grades were changed to passing status.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect this knowledge during the final evaluation? After consultation with NMT faculty, the program director found this to be inconsistent among faculty.

To address this further, the program director consulted the NMT faculty to identify a way to ensure this is done consistently in the future. In addition, exploration of an assessment rubric would be helpful.

PLO #5

NMT 4410 Clinical Practicum / Clinical visit evaluation during 2 months of clinical practicum

The \geq 85% program target was not met. 9/9 or 100% of the students received the passing option for the clinical visit. However, when the program director reviewed the visit forms the comments were inconsistent between NMT faculty. 5/9 (56%) recorded comments reflecting professional characteristics, while the other 4/9 (44%) did not have comments related to professional characteristics. Therefore, passing the visit AND having comments regarding professional characteristics only occurred in 5/9 (56%) of the students achieved the ranking of "application" or higher.

The initial review raised a question for further investigation: Do all NMT faculty members make notes and document items that may reflect professional characteristics when performing clinical visits? After consultation with NMT faculty, the program director found this to be inconsistent among faculty.

To address this further, the program director consulted the NMT faculty to identify a way to ensure this is done consistently in the future. It may be helpful to be more specific about what professional characteristics are to be identified at this stage of the clinical practicum. In addition, exploration of an assessment rubric would be helpful.

NMT 4910 Clinical Practicum / Clinical visit evaluation during 7 months of clinical practicum

This artifact was unable to be completed in the 2019-2020 academic year due to COVID-19. The NMT students were removed from the clinic on March 19, 2020 and did not return until June 1, 2020.

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

PLO #1:

Critical Reflection Assignment #1

The changes purposed for the assignment prompt during the last assessment cycle was not done as explained above. The changes will make assignment prompts specific to provide a more objective assessment, both within the assignment and the program assessment tools. The program director informed the course instructor and will ensure the inclusion of the specific Jesuit value "cura personalis" is within the assignment prompt for the next assessment cycle. Although an error was made, most the NMT students still identified and defined "cura personalis" within their critical reflection assignment.

Faculty Observation during the fifth month of rotation clinical visits

Although this artifact was unable to be measured due to the COVID pandemic and the removal of students from the clinical practicum, the program director has identified items to add to the visit form to ensure consistent use and comments from program faculty. In addition, exploration and discussions surrounding the creation of a rubric specific to the clinical visits will occur over the next year. Developments and outcomes will be shared in the next assessment cycle.

PLO #2

Capstone in Nuclear Medicine Presentation

The analysis of the results from this artifact, the assignment prompt and rubric have provided the students ample information to complete the capstone presentation as expected at this point in the NMT program. The course instructor will continue to provide this information and answer questions about the assignment when it is assigned. Additional analysis of other areas of the rubric may be considered for the next assessment cycle.

Final evaluation questions regarding communication in patient interaction

The analysis of this data remains subjective and inconsistent among NMT program faculty. During the assessment review cycle the NMT program faculty discussed ways to make this data more objective. The solutions that have developed from these conversations include but may not be limited to the following: creation of a rubric, development of specific questions that all students would have to respond to in the final evaluation regarding communication in patient interaction and the consistent documentation of comments and observations during the evaluation of each student. These solutions will be investigated further and be reported on during the next assessment cycle.

PLO #3

Case Study Project (Writing Based)

The analysis of the data has shown that the assessment rubrics used to grade the assignments used in this PLO are appropriate; however, the score cutoffs may need to be reviewed in the future to ensure they are representative of the rankings. In addition, the course instructor will try to identify ways to pinpoint more specific areas of patient positioning and acquisition parameters to provide additional instruction and support for the students in these areas.

Case Study Presentation (Presentation Based)

The results of this artifact show that the students have ample information to provide the necessary information about the cases they are presenting. However, additional information could be gathered to assist in identifying areas for improvement. More specifically, the course instructor may make comments about their presentation skills and provide constructive feedback to assist the students in becoming better presenters. Incorporation of other opportunities for presentation in this course would provide a basis to demonstrate growth in the presentation skills. These ideas were shared with the course instructor.

Clinical Simulation/Role-Playing

The analysis of the results from this artifact, the assignment prompt and rubric have provided the students ample information to complete the clinical simulation exercise as expected at this point in the NMT program. The knowledge obtained through this exercise is the first opportunity the students have to begin the correlation of didactic knowledge and clinical practice. The course instructor will continue to provide this information and answer questions about the assignment when it is assigned.

Clinical visit evaluation during the last month of clinical practicum

Through the analysis of this artifact, the program director has identified items to add to the visit form to ensure consistent use and comments from program faculty. The purpose of the clinical visits is to provide program faculty evidence of the student's ability to connect didactic knowledge to clinical practice through their experiences in the clinic. In addition, exploration and discussions surrounding the creation of a rubric specific to the clinical visits will occur over the next year. Developments and outcomes will be shared in the next assessment cycle.

PLO #5

Clinical visit evaluation during the first 2 months of clinical practicum

The analysis of the data provided insight into potential changes in the use of the clinical visit forms and how the data/comments should be interpreted. Currently, the analysis of these artifacts is subjective. The questions on the forms are not interpreted in the same manner by all instructors; therefore, responses may differ widely. The program director will investigate and review the forms with program faculty to determine if changes and updates should be made. Specific questions regarding professional characteristics may be added to the visit form.

In addition, the benchmark was not met for the NMT 4410 Clinical practicum tool. This has identified an area for improvement. Evidence in other tool measurements reveals that students perform better as they progress in the clinical practicum course. Thus, they better understand the expectations of the clinical visits as they continue to learn in the clinical setting. The program director will explore options to ensure the students are more aware of the expectations prior to this assessment.

Clinical visit evaluation during the 7 month of clinical practicum

Although this artifact was unable to be measured due to the COVID pandemic and the removal of students from the clinical practicum, the program director has identified items to add to the visit form to ensure consistent use and comments from program faculty. In addition, exploration and discussions surrounding the creation of a rubric specific to the clinical visits will occur over the next year. Developments and outcomes will be shared in the next assessment cycle.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

This is the first cycle in which all five PLO's were evaluated at the same time. This is occurring due to programmatic accreditation requirements. Discussions between the NMT program director and program faculty were had during the data collection and analysis of all PLO's and the data associated with them. The report and plan were reviewed and discussed by the NMT faculty prior to submission of the annual report in September 2020. The NMT program director and faculty will work together in investigate the opportunities for change over the next year. The 2021 report will provide an update on changes made and the outcomes of those changes in the next assessment cycle.

B. How specifically have you decided to use findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the	 Course content 	Course sequence
Curriculum or	 Teaching techniques 	New courses
Pedagogies	 Improvements in technology 	Deletion of courses
	 Prerequisites 	 Changes in frequency or scheduling of course offerings
Changes to the	 Student learning outcomes 	• Evaluation tools (e.g., rubrics)

- Data collection methods
- Frequency of data collection

Please describe the actions you are taking as a result of the findings.

• Student artifacts collected

• Evaluation process

Because of the findings described in this report, the NMT program director and faculty will be making changes to assignment prompts, evaluation tools, and exploring opportunities for additional exercises within the NMT courses to assist in the assessment of the PLO's. These changes will likely occur in most if not all courses used in these PLO's.

If no changes are being made, please explain why.

NA

Assessment Plan

7. Closing the Loop: Review of Previous Assessment Findings and Changes

A. What is at least one change your program has implemented in recent years as a result of assessment data? One change made to the NMT program because of assessment data, was the creation of an assignment rubric for the Clinical Simulation/Role Playing exercise in the NMT 4340 course in 2018. The rubric has been in place for 2 years.

B. How has this change/have these changes been assessed?

This change has provided a more objective assessment to a classroom activity. The course instructor can provide valuable feedback regarding areas of connecting didactic knowledge to clinical practice. The rubric assists in identify areas that need to be emphasized more in the course. It also provides developmental feedback to the students throughout the course.

C. What were the findings of the assessment?

An average of >85% (9/9 or 100%) of the students received a score of \geq 11/15 and achieved a ranking of "application" or higher. This exercise is developmental in nature and allows the students the opportunity to simulate the connection of didactic knowledge in the clinical setting. The course instructor spends time with each student reviewing the areas of weakness through the grading process. In addition, the students do not have to opportunity to complete this exercise again for the same nuclear medicine exam, therefore, progress within this course is not feasible.

The analysis of the results from this artifact, the assignment prompt and rubric have provided the students ample information to complete the clinical simulation exercise as expected at this point in the NMT program. The knowledge obtained through this exercise is the first opportunity the students have to begin the correlation of didactic knowledge and clinical practice. The course instructor will continue to provide this information and answer questions about the assignment when it is assigned.

D. How do you plan to (continue to) use this information moving forward?

Moving forward, the NMT program will continue to evaluate all five PLO's eash assessment cycle. The assessment process and outcomes will be used in to inform changes within the courses and the overall NMT program. The NMT assessment plan and report are also shared with the NMT advisory committee to provide discussion and input from the committee regarding changes to the NMT program curriculum and its courses.

IMPORTANT: Please submit any assessment tools and/or revised/updated assessment plans along with this report.

Nuclear Medicine Technology Assessment Rubrics

****IMPORTANT NOTES:** The ratings, identified by the column headings below, are of increasing complexity moving across the table (from left to right). Students who can demonstrate Jesuit values as they perform diagnostic imaging procedures (that is, meet the "application" rating) must be able to first identify examples of Jesuit values (the "knowledge" rating). Likewise, in order for students to evaluate the use of Jesuit values (the "synthesis" rating), they must identify examples of Jesuit values (the use of the use of Jesuit values (application).

NUCLEAR MEDICINE TECHNOLOGY (NM	Г)
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Program Learning Outcome (PLO #1): Students will demonstrate the Jesuit value, "Cura Personalis" as they perform diagnostic imaging procedures.

Knowledge**	Application**	Synthesis**
 Define the Jesuit value of Cura Personalis. 	 Examine circumstances in which Cura Personalis has been portrayed in their experiences in the clinical setting. 	 Develop alternative actions in the use and/or non-use of Cura Personalis in the clinical setting.

NUCLEAR MEDICINE TECHNOLOGY (NMT)	
Program Learning Outcome (PLO #2)	: Students will demonstrate effective	communication when speaking with
both patients and other healthcare p	rofessionals in the nuclear medicine d	epartment.
Knowledge**	Application**	Synthesis**
 Recognize the need to adjust conversations and explanations based on the audience. (i.e. use lay terms for patients and 	 Apply knowledge during senior capstone presentation and with patients in the clinic. 	 Revise communication with patients in as they progress in the clinical setting.

NUCLEAR MEDICINE TECHNOLOGY (NMT)				
Program Learning Outcome (PLO #2)	: Students will demonstrate effective	communication when speaking with		
both patients and other healthcare p	rofessionals in the nuclear medicine d	epartment.		
Knowledge**	Application**	Synthesis**		
technical terms for other				
healthcare providers)				

NUCLEAR MEDICINE TECHNOLOGY (NMT)			
Program Learning Outcome (PLO #3)	: Students will use knowledge, facts a	nd data to assess problems and find	
solutions.			
Knowledge**	Application**	Synthesis**	
 Identify errors in an imaging case study presented. 	 Interpret data presented in an imaging case study. 	 Propose solutions to errors found in an imaging case study presented. 	

N	NUCLEAR MEDICINE TECHNOLOGY (NMT)				
Program Learning Outcome (PLO #4): Students will demonstrate the ability to translate didactic knowledge into clinical practice as a nuclear medicine technologist.					
Kn	owledge**	Application**	Synthesis**		
•	Recall facts and theories relating to nuclear medicine technology.	 Relate facts and theory to the clinical practice of nuclear medicine technology. 	 Evaluate the use of facts and theory of nuclear medicine technology in clinical practice. 		

NUCLEAR MEDICINE TECHNOLOGY (NMT)				
Program Learning Outcome (PLO #5): Students will exhibit professional characteristics expected of nuclear medicine technologists.				
Knowledge**	Application**	Synthesis**		
 Define professional characteristics of a nuclear medicine technologist. 	 Demonstrate professional characteristics of a nuclear medicine technologist. 	 Integrate professional characteristics into practice as a nuclear medicine technologist. 		

Saint Louis University

JRCNMT 2019 Standards Compliance Report For Undergraduate Programs

Form	Satisfactory	Unsatisfactory		
B Resource Report X				
 Include the PD's assessment of the adequacy of resources. Student input is fine but PD knows more about many of these items. Refer to guidance sheet emailed with this document. 				
I Competency Confirmation	х			
All competencies addressed ir	n one or more courses.			
J Assessment of Program SLOs	х			
 5 SLOs – broad variety of technical NMT and other competencies. SLO #2 on effective communication with patients – consider using a clinical evaluation assessment tool (the question(s) focused on communication) since that is where actual communication with patients occurs. This form will be modified to have a place for benchmarks so be prepared to identify the acceptable score/rating for each assessment tool. Annual evaluation and documentation on this form is required by JRCNMT. Please adjust the program's assessment schedule accordingly. 				
L Program Effectiveness Data	х			
 State benchmarks with more detail – i.e. are they annual percentage or three-year average? Regarding the student evaluation of individual didactic courses, clinical experience and faculty – didactic education and clinical education should have separate results. Combining results of these two different types of education may mask important information. For graduate assessment and employer assessment – how was the 100% satisfaction determined? Was it based on responses to a single question on the survey or a compiled score for the entire survey? Also be sure to indicate the 'n' or number of respondents for each parameter reported. For AC feedback item – summarize key items discussed, major concerns raised, etc. For affiliate visits - identify trends or themes noted on visits, issues raised by AES, etc. 				

Notes: Submission of a revised report is not necessary for this program. Please utilize this feedback when completing

these forms for the next academic year.

Nuclear Medicine Technology Program Critical Self-Reflection Journaling Assignment

Critical self-reflection refers to the most important learning experience. It means reassessing the way we have posed problems, our own meaning perspectives, and reassessing our own orientation to perceiving, knowing, believing, feeling, and acting.



As another form of communication between faculty and student, NMT students are required to make regular written comments and reflections on experiences in the clinical areas in a critical reflection/journal entry. <u>The student is</u> required to turn in one entry per rotation. These reflections are to describe experiences in the clinic. They are not designed to be written about personal topics or issues.

Reflection entries will be due at 5pm on the date indicated below. The entries should be emailed to Crystal

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Entries are to be 1-2 pages in length. Please use template provided on Blackboard to type these entries. They should be singled spaced and in 14pt Arial font.

Prompts for each critical reflection:

Rotation #1: Due 2/10/20

Jesuit values What are they and how are they reflected in the clinical setting?

Rotation #2: Due 4/6/20

Professional characteristics of a nuclear medicine technologist Provide examples of portrayal (good and bad) of the professional characteristics mentioned I your reflection.

Rotation #3: Due 6/1/20

Ethical Dilemma Have you witnessed an ethical dilemma or been involved in one personally during your time in the clinic?

Rotation #4: Due 7/27/20

Professional Development Describe your progress as an NMT. Think back to the first rotation and how you felt and compare to the fourth rotation as you are finishing the program.

These entries should NOT be written during clinical time. These entries will not be shared with the clinical personnel.

Critical Self-Reflection Journal Form

Student Name: Date: Rotation: Clinical Site:

	0- Beginner	1-Developing	2-Accomplished	3-Advanced
Identifies and	Does not identify or	Minimally identifies	Identifies and	Identifies and summarizes
Summarizes Issue(s)	summarize issue(s).	and summarizes	summarizes	issue(s) comprehensively.
		issue(s).	aspects of the issue(s).	Explores all aspect of the issue(s).
Gathers facts and	Only uses facts or	Seeks and gathers	Seeks and gathers ample	Generates
evidence related to	evidence present at	minimal information	additional	comprehensive set of
issue(s)	the onset of the issue.	related to issue from	information from a	facts/evidence
	Does not	one or	variety of sources.	based information from a
	seek out additional	fewer sources,	Seeks both facts and	variety of sources.
	information.	or inappropriate	opinions.	Distinguishes between
	Considers all information	sources.		facts and opinion when
	as factual.	Understands the		presenting evidence
		difference		
		between facts and		
		opinions.		
Incorporates	Does not consider the	Approaches issue(s)	Approaches issue(s)	Utilizes all resources and
perspectives	other points of view	based off of	based off of other	perspectives
	when	personal	people's	available when
	approaching issue(s)	perspective and	perspectives and	approaching issue(s)
		majority/popular	consulting a few	
		points of view	resources	

Draws Conclusions	Does not draw conclusions or formulates conclusions inconsistent with evidence and perspectives	Formulates some conclusions consistent with some evidence but lacking in depth and scope	Formulates conclusions consistent with most evidence	Formulates conclusions consistent with a wide range of evidence
Identifies impact on future	Does not identify implications or consequences to self or others. Does not acknowledge impact of issue on future.	Identifies implications and consequences of issue(s) to self. Identifies potential effect on future.	Identifies implications and consequences of issue(s) to self and others. Identifies concrete examples of change in future.	Comprehensively identifies implications and consequences of issue(s) to self and others and makes connections to specific ways in which the future will be affected.
Total:				

Saint Louis University Nuclear Medicine Technology Program Site Visit Evaluation Form

Student:______

Date:_____ Arrival time: _____

Rotation number: _____

Visit number: _____

Clinical site: _____

Student comments:

Procedures and comments on tasks at the clinical site:

Site Visitor's Report:

Assessment of student's progress and performance:

Competency Evaluation:		
Issues with teaching and supervision:		
Recommendations for next visit:		
GradePASS / FAILStudent brought books and organizStudent was able to locate informaStudent was prepared to discuss anyillustrates understanding of exams discussed	zed notes for visit. ation in notes and/or books. v exams they had observed, participated I Student paperwork is up to o	or performed Student date.
Signatures:		
Clinical Supervisor:	Site Visitor:	
Student:	Departure time:	_
		Rev 11/2017

NMT INVESTIGATIVE PAPERS SCORE SHEET

STUDENT:_____

Paper should be investigative; with the student gathering data, analyzing it and coming to a conclusion. If the paper is informative only, take points off. Length should be 4-5 pages and should have a bibliography. If no bibliography, no research was done – take points off.

Did writer define objective of paper?	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Adequate research done	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Was the paper investigative?	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Was data documented?	1 2 3 4 5 6 7 8 9 10
Was rationale based on data collected?	1 2 3 4 5 6 7 8 9 10

Was conclusion based on data?	1 2 3 4 5 6 7 8 9 10
Grammar / punctuation / neatness	1 2 3 4 5
Length of paper	1 2 3 4 5
Bibliography	1 2 3 4 5
Overall interest of subject	1 2 3 4 5 6 7 8 9 10
Comments:	

Total Score: _____

NMT Student Presentations and Papers

When: TDB

Time: 1:30 PM

Where: DCHS

Each student is to write a 4-5 page paper (cover the topic) and also summarize the paper in a **10-15 minute** presentation on the above date. **Papers are not to be read**! The audience assembled for the paper presentation will be the clinical supervisors and physicians from each of the affiliated hospitals. Students should dress business casual for the presentation. **PowerPoint's must be submitted to Crystal Botkin by Tuesday, May 4, 2020.**

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PowerPoint or Prezi should be utilized to get your points and ideas across. Please be prepared to answer questions by our audience. Your ability to convey your knowledge of the approved topic will be considered in the grading process. Handouts are suggested and work should be your own. Papers should be typed and include any references and bibliographies. The format of the papers is not dictated. Many students choose to write in journal article format.

Any questions please contact Crystal Botkin at 977-8592.

Student Capstone Presentation Evaluation:

- 1) Note: scoring methodology: Grade on criteria as indicated below, from 5 to 1. Use whole numbers.
- 2) Scoring is as follows: 5 = excellent; 4 = very good; 3 = good or average; 2= below average, 1 = poor.
- 3) Evaluation categories below are listed in descending merit: 5 is highest, 1 is least.

A. Project, global:

- 5 Project was a basic or primary scientific analysis of a subject important to nuclear medicine performed using background, hypothesis, methods, data acquisition, analysis, discussion, conclusion.
- 4 Project involved data gathering or surveys and involved analysis, but lacked one or more of background, hypothesis, methods, data acquisition, analysis, discussion, conclusion.
- 3 Subject examined in only a descriptive manner, but discussed new methods or materials AND subject is relevant to nuclear medicine.
- 2 Subject was a review of previous material familiar to the audience.
- 1 Subject had little relevance to nuclear medicine and of little merit.

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B. Content:

- 5 Excellent scientific paper, student demonstrates good understanding of nuclear medicine science. Has hypothesis/premise, methods, results, analysis, conclusion, all with good merit.
- 4 Project reflects an understanding of science of nuclear medicine, has a good knowledge of the subject, presentation has hypothesis (or premise), methods, results, analysis, conclusion.
- 3 Project shows some understanding of subject matter relevant to nuclear medicine, but only average in respect to methods, results, analysis, conclusion.
- 2 Project has minimal relationship to nuclear medicine science, had minimal discussion or analysis hence, minimal understanding of subject matter.
- 1 No discernable science presented, little understanding of nuclear medicine science, little or no discussion or analysis or rational conclusion.

C. Scientific Merit

- 5 Project is of significant scientific merit and worthy of submission for publication.
- 4. Project shows good merit, but lacks in complete novelty. Yet, worthy of presentation at a local or regional meeting.
- 3. Project demonstrates some originality and attempt at discovery, but somewhat lacks in its achievement due to effort or complexity of subject.
- 2 Project was a good idea at the start, but failed to achieve its goals and better luck next time.
- 1 Project unoriginal, generally plagiarized, lacking rational thought and best kept in a locked file.
- D. Preparation and Presentation
- 5 Student is well-prepared, understands the subject matter, focused on the relevant material.
- 4 Student is prepared but presentation is weak, i.e. rushed, too jocular, marginally educates audience.
- 3 Student is somewhat prepared but presentation is faulty (slides out of order, computer problems).
- 2 Presentation is marginal, subject matter obscure, images not relevant, audience restless and confused.
- 1 Presentation put together with minimal effort, material uncoordinated, slides show unorganized.

Nuclear Medicine Information Systems Mid Term Project Prompt

<u>Group work</u>: You will need to include the following items for each examination. You will answer the questions included in the prompts below based on the .pdf images that are given to you for each assignment. These will most likely be sent via email. You will need to use what you have learned in this course and your other Nuclear Medicine courses so far to answer the questions.

- Indications and contraindications for the examination ordered
- Alternate and/or complementary imaging choices (e.g., ultrasound, CT, etc.)

- Normal and abnormal organ function
- Patient preparation
- Radiopharmaceutical choice, dose, and route of administration
- Adjunctive medications used for this procedure, dose, and route of administration (e.g., CCK, Morphine, etc.)
- Equipment selection (e.g., camera, collimator, etc.)
- Patient positioning
- Acquisition protocol parameters
 - Please list in detail the acquisition protocol for your assigned patient examination.
- Processing protocol parameters
 - All processing protocol parameters should be complete and detailed. (e.g., matrix, type of images acquired, time per frame, etc.)
 - Content should describe the procedure for processing the acquired data for your assigned patient. This includes what images you process, what ROI are used, how the ROI are drawn (this is like what you will be doing individually for each assignment)
- Report critique & analysis include what is wrong with the study is anything (could be in acquisition or processing)
 - Your critique & analysis should be clearly articulated and specific.
 - It should be concise, accurate, and include any issues, problems or corrections that would be necessary to properly interpret the report.
- Diagnostic findings (what you think is normal or wrong with the patient from this exam)
 - Must be complete and accurate.
 - Findings must be described in clear and specific terms.

Hepatobiliary group assignment due Tuesday 09/15/2020 by 11:59pm

<u>Individual Work</u>: For each exam used for the group work .pdf images, you will be assigned one to two individual processing assignments to be completed during class time and reviewed by the instructor. These will be completed using the Philips IntelliSpace software.

Hepatobiliary individual assignment due Tuesday 09/15/2020 by 12:15pm

NMT Student Case Study Grade Sheet

Student Name:_____

Date:_____

Graded By:_____

There is a total of 10 points possible for each case study. Please score based on the following criteria.

 Case #1
 Type of Exam _____

______Student explained the proper patient preparation for the exam discussed. (2 pts) ______Student explained the exam protocol and proper images that should be acquired for the exam discussed. (4 pts) ______Student presented at least 2 abnormal studies and explained why they are abnormal. (4 pts)

_____/10 Total Score

Case #2 Type of Exam _____

_____ Student explained the proper patient preparation for the exam discussed. (2 pts)

______Student explained the exam protocol and proper images that should be acquired for the exam discussed.(4 pts)

_____ Student presented at least 2 abnormal studies and explained why they are abnormal. (4 pts)

_____/10 Total Score

Rubric for Capstone NMIS Case Study Evaluation

Dointe Achievable	Complete,	Complete,	Incomplete, Some
Points Achievable	Excellent detail	Good detail	or no detail
Indications &			
Contraindications	(5)	(4-3)	(2-0)
Alternate and/or			
Complimentary Imaging			
Choices	(5)	(4-3)	(2-0)
Normal & Abnormal Organ			
Function			
	(5)	(4-3)	(2-0)
Patient Preparation	(5)	(4-3)	(2-0)
Radiopharmaceutical			
Selection & Administration			
	(5)	(4-3)	(2-0)
Augmented Drugs	(5)	(5)	(0)
Equipment Selection	(5)	(5)	(0)
Patient Positioning	(5)	(5)	(0)
NMIS Image Acquisition			
Parameters	(5)	(4-3)	(2-0)
NMIS Processing Protocol			
Parameters	(10-9)	(8-7)	(6-0)
NMIS Report Critique &			
Analysis	(25-19)	(18-16)	(15-0)
NMIS Diagnostic Findings			
	(10-9)	(8-7)	(6-0)
Organization of Case Study &			
Formatted Correctly			
	(10-9)	(8-7)	(6-0)

Clinical Nuclear Medicine Course

Technologist/Patient Clinical Simulation Rubric

15 pts. possible

Did the student portraying the technologist 1) Properly introduce themselves? 1 pt.	
2) Properly obtain patient identification? 1pt.	
3) Ask patient proper preparatory questions related to the exam? 4 pts. Food Drink Pregnancy Medications History and Physical	
4) Have the knowledge to explain the exam to the patient? 4 pts.	
5) Can answer patient questions? 3 pts.	
6) Respond well to feedback and constructive criticism? 2 pts.	