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

Program: Nuclear Medicine Technology	Department: Clinical Health Sciences
Degree or Certificate Level: BS	College/School: **Doisy College of Health Sciences**
Date (Month/Year): August 2021	Primary Assessment Contact: Crystal Botkin

In what year/cycle was the data upon which this report is based collected? 2020/2021

In what year/cycle was the program's assessment plan most recently reviewed/updated? 2019/2020

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 at the 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.

PLO #2
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.

PLO #5
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 identified students scoring ≥10 out of 15 AND providing appropriate examples of "cura personalis" in the clinic as achieving the ranking of "knowledge" or higher.

After the last assessment cycle, the prompt for this critical reflection assignment was changed. Instead of asking the students to just identify "Jesuit Values," they are also asked "How have you seen "Cura Personalis" reflected in the clinical setting?"

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 of "cura personalis" 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: Did all NMT faculty members make notes and document items that may reflect "cura personalis" when performing clinical visits?

To address this further, the program director consulted the NMT faculty to identified terms that would constitute the application of "cura personalis", if the term was not said or documented directly.

PLO #2

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 gave their presentations via ZOOM. The ZOOM presentations were reviewed by NMT faculty and advisory committee members in attendance. The NMT program director reviewed the completed evaluations 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. The development of a rubric will be part of the process in changing the NMT curriculum during the 2022-2023 academic year.

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 ≥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 ≥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 ≥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. Development of such rubric will be done during the NMT curriculum change in the 2022-2023 academic year.

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? There is not a rubric for the evaluation currently. Development of such rubric will be done during the NMT curriculum change in the 2022-2023 academic year.

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)?

NOTE:
The program target identified in the assessment plan, which is the minimum percentage of students able to achieve each PLO at the designated ranking, was established at the College standard rate of 85% or better by the former Dean of the Doisy College of Health Sciences.

PLO #1
NMT 4410 Clinical Practicum / Critical Reflection Assignment #1

An average of >85%, 2/2 (100%) of the NMT students scored ≥10/15 on the critical reflection assignment.

In digging deeper, the program director reviewed the examples of "cura personalis" and found that indeed all students could appropriately identify aspects of this Jesuit value.

The target was met for this artifact.

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

An average of >85%, 2/2 (100%) of the NMT students did identify aspects of the Jesuit value "cura personalis" during their clinical visit with NMT faculty.

The initial review raised a question for further investigation: Did all NMT faculty members make notes and document items that may reflect "cura personalis" when performing clinical visits? After this assessment review cycle, the program director did confirm that NMT faculty made notes on the visit form about aspects of "cura personalis" discussed with the student and clinical supervisors. Although the specific "cura personalis" term may not have been used, other terms, such as, "technologists are helpful", "student is good with patients" were noted.

The target was met for this artifact.

PLO #2
NMT 4960 Capstone in Nuclear Medicine / Capstone Presentation

An average of >85% (2/2 or 100%) of the students scored ≥4 in section D. Preparation and Presentation of the assessment rubric.

The target was met for this artifact.

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

An average of 100% (2/2) 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 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. Initial conversations did not yield an objective way to assess this artifact. However, the NMT curriculum and clinical assessments will be changing in 2022-2023 academic year and additional opportunities to assess this will be addressed. Development of new rubrics will be done during the NMT curriculum change in the 2022-2023 academic year.

PLO #3
NMT 4350 Nuclear Medicine Information Systems / Case Study Project (Writing Based)

An average of >85% (2/2 or 100%) of the students received score of ≥80% ranking of "knowledge" or higher. Deficient areas identified by the instructor were exam indications and contraindications. This information will be considered and shows areas which may be improved upon for the next time the course is offered.

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

An average of >85% (2/2 or 100%) of the students received a score of ≥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% (2/2 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 ≥85% program target was met. An average of 100% (2/2) 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 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. Development of new rubrics will be done during the

NMT curriculum change in the 2022-2023 academic year.

PLO #5
NMT 4410 Clinical Practicum / Clinical visit evaluation during 2 months of clinical practicum

The ≥85% program target was met. 2/2 or 100% of the students did identify examples of professional characteristics during the clinical visit with NMT faculty.

After this assessment review cycle, the program director did confirm that NMT faculty made notes on the visit form about aspects of professional characteristics discussed with the student and clinical supervisors. The following comments were noted on the visit form and identify professional characteristics, "student is prompt", "student is catching on quickly", "student is ambitious and gets involved in all studies" were noted.

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. As mentioned during the last assessment cycle, the program director was going to add a specific question to the visit form to ensure proper documentation. This change did not get made amongst the COVID pandemic.

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

The ≥85% program target was met. 2/2 or 100% of the students did identify examples of professional characteristics during the clinical visit with NMT faculty.

After this assessment review cycle, the program director did confirm that NMT faculty made notes on the visit form about aspects of professional characteristics discussed with the student and clinical supervisors. The following comments were noted on the visit form and identify professional characteristics, "student is ready to work", "student feel like they are competent in many nuclear medicine procedures", "I would hire this student" were noted.

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. Development of new rubrics will be done during the NMT curriculum change in the 2022-2023 academic year.

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 has been helpful in specifically identifying the students' knowledge of the Jesuit value "cura personalis". The new assignment prompt provided the students direction as to what the NMT faculty were wanting to see in the critical reflection writing assignment.

Faculty Observation during the fifth month of rotation clinical visits

While a specific question was not asked consistently about "cura personalis" in the clinic during this clinical visit. NMT faculty consistently noted terms/comments which identified the student and/or clinical supervisors saw aspects of this Jesuit value in the clinical setting. Therefore, this artifact shows progression into the ranking of "synthesis" as outlined in the attached rubrics.

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 has identified a clinical supervisor who would like to take part in ensuring the students have ample projects and understanding of the desired outcomes of

this assignment and how it relates to the clinical setting.

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. The NMT curriculum and clinical assessments will be changing in 2022-2023 academic year and additional opportunities to assess this will be addressed. Development of new rubrics will be done during the NMT curriculum change in the 2022-2023 academic year.

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 exam indications and contraindications 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. The new NMT curriculum will provide additional opportunities for NMT students to present these types of cases, as they will begin NMT courses 1 semester earlier. Therefore, potential for 1-2 additional case studies may be possible and could demonstrate growth in their presentation skills.

PLO #4

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. The new NMT curriculum will provide additional opportunities for NMT students to complete additional clinical simulation exercises, as they will begin NMT courses 1 semester earlier. Therefore, potential for 1-2 additional exercises may be possible and could demonstrate growth in the connection of didactic knowledge to clinical practice.

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. The NMT curriculum and clinical assessments will be changing in 2022-2023 academic year and additional opportunities to assess this will be addressed. Development of new rubrics will be done during the NMT curriculum change in the 2022-2023 academic year.

PLO #5

Clinical visit evaluation during the first 2 months of clinical practicum AND Clinical visit evaluation during 7 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. While subjective, the NMT faculty have identified terms/comments that are consistently documented that portray aspects of professional characteristics. In addition, progressive terms/comments were identified and show progression from "application" to "synthesis" The NMT curriculum and clinical

assessments will be changing in 2022-2023 academic year and additional opportunities to assess this will be addressed. Development of new rubrics will be done during the NMT curriculum change in the 2022-2023 academic year.

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?

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 2021. The NMT program director and faculty will work together in investigate the opportunities for change over the next year. The 2022 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 Curriculum or Pedagogies	• Course content • Teaching techniques • Improvements in technology • Prerequisites	• Course sequence • New courses • Deletion of courses • Changes in frequency or scheduling of course offerings
Changes to the Assessment Plan	• Student learning outcomes • Student artifacts collected • Evaluation process	• 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.

Because of the findings described in this report, the NMT program director and faculty will continue to discuss potential additions and changes to the assessment PLO's, artifacts and rubrics within the NMT courses. There are substantive changes happening to the NMT curriculum beginning Spring 2022. These changes will provide a rich environment for additional review of the course content, course assignments, assessment artifacts and the development of assessment rubrics.

If no changes are being made, please explain why.

The NMT faculty are not making changes to the current assessment plan. The upcoming changes in the NMT curriculum will create the opportunity to create a new plan at that time.

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?

Previous assessment identified the need for specific questions to be added to clinical visit forms. However, after further discussion, the NMT program faculty were about to objectively assess aspects of "cura personalis" and professional characteristics by identifying terms/comments from students and clinical supervisors that are consistently noted on the visit forms. Therefore, the failure to make change identified previously, posed no adverse effects to the assessment reporting.

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

The NMT faculty had detailed discussions and found that the targets were being met and the specific terms of "cura personalis" or professional characteristics do not have to be present to obtain the desired outcomes.

C. What were the findings of the assessment?

PLO #5

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

The ≥85% program target was met. 2/2 or 100% of the students did identify examples of professional characteristics during the clinical visit with NMT faculty.

After this assessment review cycle, the program director did confirm that NMT faculty made notes on the visit form about aspects of professional characteristics discussed with the student and clinical supervisors. The following comments were noted on the visit form and identify professional characteristics, "student is prompt", "student is catching on quickly", "student is ambitious and gets involved in all studies" were noted.

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

The ≥85% program target was met. 2/2 or 100% of the students did identify examples of professional characteristics during the clinical visit with NMT faculty.

After this assessment review cycle, the program director did confirm that NMT faculty made notes on the visit form about aspects of professional characteristics discussed with the student and clinical supervisors. The following comments were noted on the visit form and identify professional characteristics, "student is ready to work", "student feel like they are competent in many nuclear medicine procedures", "I would hire this student" were noted.

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 each assessment cycle, as required by the NMT program accreditation agency, the Joint Review Committee on Nuclear Medicine Technology Education Programs (JRCNMT). 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 (knowledge) and provide concrete evidence of the use of Jesuit values (application).

NUCLEAR MEDICINE TECHNOLOGY (NMT)		
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 #1): Students will demonstrate the Jesuit value, "Cura Personalis" as they perform diagnostic imaging procedures.		
Knowledge**	**Application****	**Synthesis****

NUCLEAR MEDICINE TECHNOLOGY (NMT)		
Program Learning Outcome (PLO #2): Students will demonstrate effective communication when speaking with both patients and other healthcare professionals in the nuclear medicine department.		
Knowledge**	**Application****	**Synthesis****
• Recognize the need to adjust conversations and explanations based on the audience. (i.e. use lay terms for patients and technical terms for other healthcare providers)	• 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 #3): Students will use knowledge, facts and 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.

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.		
Knowledge**	**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

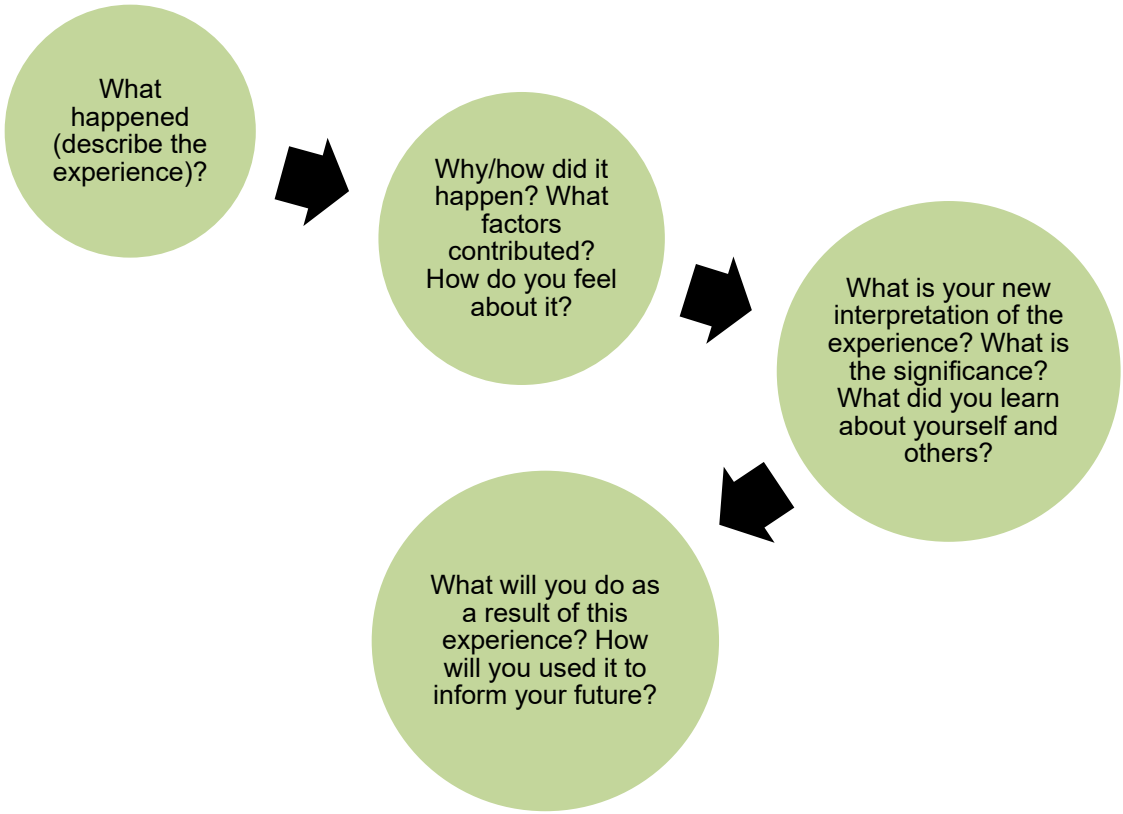
Form	Satisfactory	Unsatisfactory
B Resource Report	**X**	
□ Include the PD's assessment of the adequacy of resources. Student input is fine but PD knows more about many of these items. Refer to guidance sheet emailed with this document.		

I Competency Confirmation	**X**	
☐ All competencies addressed in one or more courses.		
J Assessment of Program SLOs	**X**	
• 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	**X**	
• 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.

SAINT LOUIS UNIVERSITY
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. **The student is 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.

The entries should be emailed to Crystal Botkin at crystal.botkin@health.slu.edu by 5pm on the due date found in eValue Program Calendar.

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 1/25/2021**

Jesuit values
What are the Jesuit Values?
How have you seen "Cura Personalis" reflected in the clinical setting?

Rotation #2: Due 3/22/21

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

Rotation #3: Due 5/17/21

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

Rotation #4: Due 7/12/21

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

Date:_____ Arrival time: _____

Rotation number: _____ Visit number: _____

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:

Grade PASS / FAIL
___ Student brought books and organized notes for visit.
___ Student was able to locate information in notes and/or books.
___ Student was prepared to discuss any exams they had observed, participated or performed. ___ Student illustrates understanding of exams discussed ___ Student paperwork is up to 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.**

Topics should not be a rehashing of what was presented during the first semester. The topics should include some form of **investigative research** related to nuclear medicine technology. The topic should be of interest to you. Topics will be assigned on a first come, first serve basis. No topic will be duplicated. You must clear your topic through Crystal Botkin before charging ahead with your research. Please confirm your topic by March 2020.

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.

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

Individual Work: 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

Points Achievable	Complete, Excellent detail	Complete, Good detail	Incomplete, Some 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. _____